DETAILED EXISTING BUILDING ASSESSMENT

at the Geneva Public Library

127 James Street, Geneva IL

DATE: 10/28/2015

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TABLE OF CONTENTS

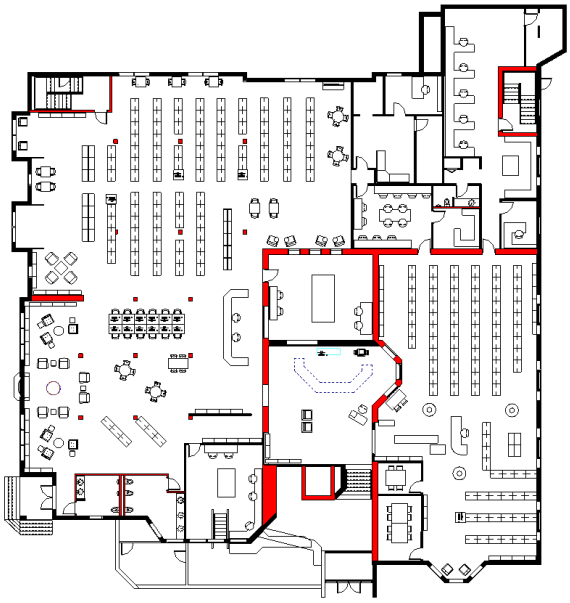
INTRODUCTION:

StudioGC Inc (SGC) was engaged to perform a detailed building assessment for the Geneva Public Library District (GPLD). The report is being prepared to be a part of the Visioning and Master Plan Report. The detailed building organized is divided up as follows:

- *Detailed Building Description*
- *Physical Review of Property*
- *Basic ADA survey*
- *Code Review*
- *Recommendations and Budgets*
- *Conclusions and Considerations*
- *Initial Maintenance Budgeting Matrix*

The intent is to provide the Geneva Public Library District (GPLD) a complete understanding of their current building. This includes the current challenges, potential resolutions and budget impacts to resolve those issues. This is to be read in conjunction with the needs assessment in order to better prepare GPLD for future financial decisions.

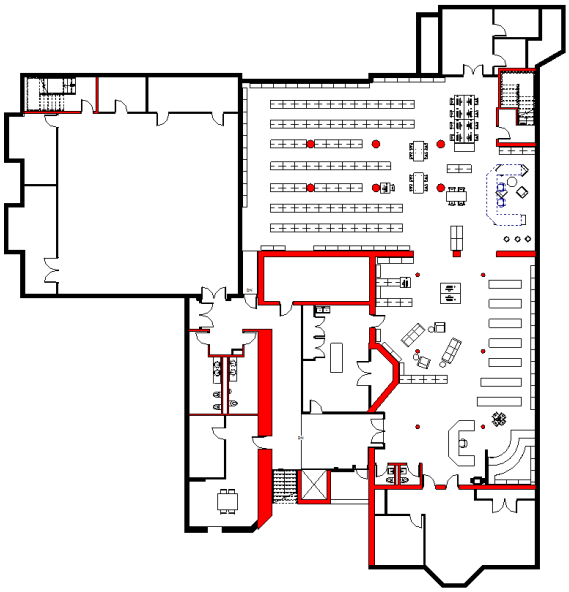
DETAILED BUILDING DESCRIPTION:



BUILDING HISTORY

The Geneva Library building was initially constructed in 1896 but due to a lack of funds construction was not completed on the initial building until 1908. Subsequently in 1938, 1986 and 1998 there have been a number of additional interior renovations over the years.

ARCHITECTURAL REVIEW



Building Construction: The building is a series of additions constructed about every 20-30 years. The site achieved maximum build out capacity with the 1998 addition.

The original portions of the building are load bearing stone walls, wood joists, beams and steel columns. The newer additions appear to be load bearing masonry walls with wood joists. It appears that the roof structure was entirely replaced during the 1986 additions.

As the building is a multi-level the flooring systems vary depending if they are over a lower area. The adult reference area is a wood floor supported by wood joists over an unconditioned, and unventilated, crawl space. The flooring cavity is uninsulated and pipes run uninsulated through the crawl space. The lower circulation area is an uninsulated slab on grade. The upper fiction and the east section of non-fiction appears to be a steel frame supported, concrete filled, metal deck.

The physical aspects of the building are in good shape. The building is adequately conditioned despite the lack of proper insulation in the walls, floors, or roof attic, as such any variations are generally not noticeable by the general public. However, in order to be able to maintain this level of comfort, a significant cost burden is absorbed by GPLD due to the need to run the HVAC to counteract these issues.

Windows and Doors: As with other components in the building, the windows and doors are of varying construction depending on the year that portion of the building was built. The original windows are single pane wood frame windows with storm glass on the exterior. They are significantly past their useful life and experiencing a heavy amount of air infiltration. This is most notable in the toilet rooms on the main floor where there is not sufficient conditioned air to combat the infiltration this results in freezing temperatures during the winter and the use of temporary heating to keep pipes from freezing. The remaining windows are double pane windows in hollow metal frames. As some of the gaskets in the windows have failed, these windows and doors have also exceeded their useful life and should be budgeted for replacements as soon as possible.

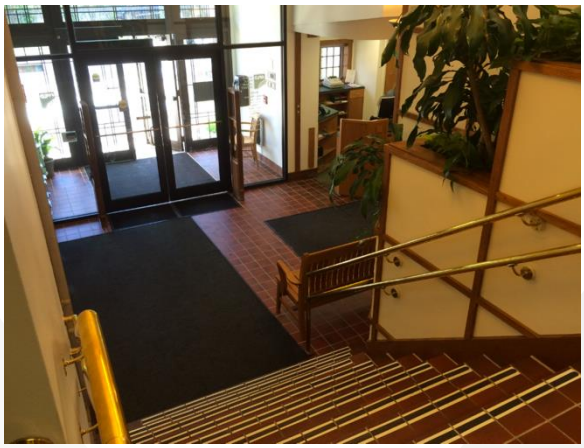
Roof: The shingled roof was replaced in 2014 due to a significant number of failures leading to internal water damage. The roof is a combination of a shingle "mansard" roof surrounding a flat modified bitumen roof. The flat roof holds two rooftop units.

The mansard portion of the roof is built from dimensional lumber trusses and it is anticipated (the area was not accessible) that the central flat structure is steel framed and supported to carry the loads of the rooftop units and snow.

As the roof finish has been entirely replaced it is assumed that it will meet or exceed its anticipated life expectancy. Typically for modified bitumen roofs this is approximately 14 years, but should be checked annually after 8 years, and the shingle roof can last upwards of 20 years and should be checked annually after 15 years. It is recommended that GPLD enter into a maintenance agreement with the roofing contractor to provide these services.

Elevator/Vertical Circulation:

The stairs are adequately located and sized for the use. They are in good condition. GPLD should take care to not allow storage at the bottom of the stairs as this is a building code violation. Please note that any renovation of the front entrance will require the stairs to be reconfigured to be compliant with current codes.

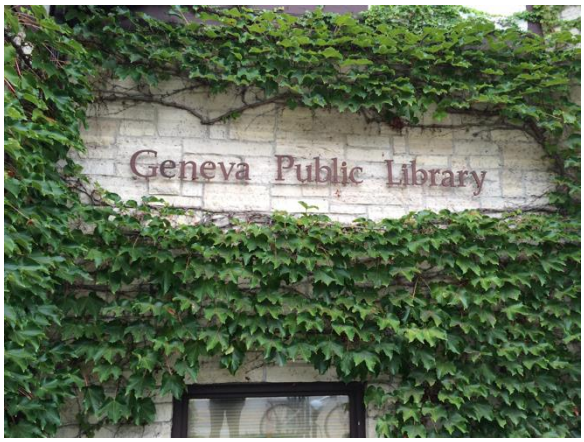


The elevator, built in approximately 1986 and has undergone a recent repair to get it back to a serviceable state. However, despite it being functional, it does not meet current standards for elevator design, speed, finishes or operation. This provides difficulties for the patrons. The staff has fielded complaints and concerns that families are unable to use the elevator due to its size. It is difficult to maneuver a stroller and additional children around within the elevator. Additionally, it does not meet current ADA requirements.

(See subsequent section.) This means that a person in a wheel chair or walker is not able to turn around within the elevator and is forced to back in and out in a particular manner. The results in unsafe conditions for the patrons of the library due to blind spots.

Operational Concerns: Due to the age of the building a number of general architectural concerns exist.

Energy Efficiency: The building wall construction is effectively a thermal mass design. Even up until the 1986 expansion and renovation energy efficiency was not a primary concern in building envelope construction. The current wall and window construction allow for air leakage. This is evident in the toilet rooms during the winters when the rooms are frost ridden. This leaves those, and other spaces, vulnerable to freezing and burst pipes.

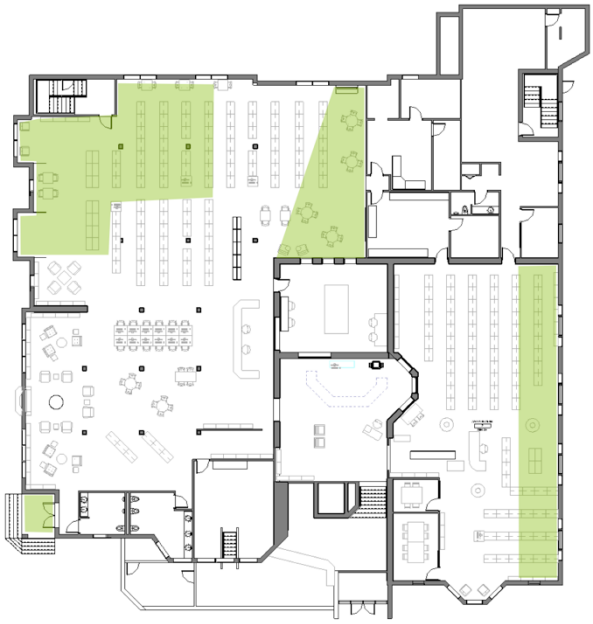


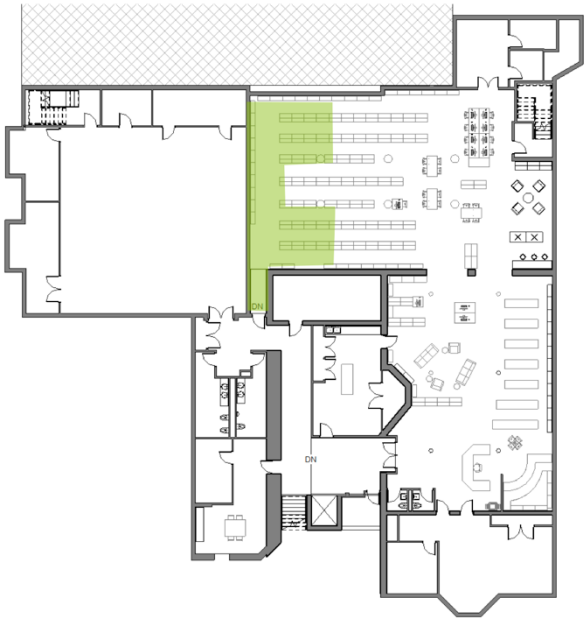
Building Envelope: The exterior envelope construction varies in keeping with the age of the additions or renovations. As stated this construction significantly affects the energy efficiency. The ivy growth on the walls of the building and the evidence of air leaks indicates the exterior is in significant need of tuck-pointing and repair. This is also allowing pests to enter into the building, this has been primarily noted in the children's area (mice in the ceiling) and the bathrooms (box elder infestations).

Storage Space: The library has a thriving Friends of the Library group. This has resulted in an extensive need for storage. Prior to the sale events the large meeting rooms storage rooms are filled to capacity. It must be noted that per fire code no storage is allowed within 18" of the ceiling. GPLD currently maintains three off-site storage spaces. It would normally be recommended to find or expand to provide building storage to eliminate the ongoing expense of off-site storage. However, the current location and construction of the

building does not allow for that to occur. Therefore, a renovation would need to occur at a loss of operational and program space resulting in a reduction in services for the patrons. As such GPLD is left with an untenable consideration and being forced to obtain additional off-site storage locations.

Security: In the design process of new libraries it is a primary consideration to provide the greatest amount of visibility at the least amount of staff service points. The current physical layout of the library requires a high number of staff points while still not providing the level of visibility recommended. For example, almost all perimeter walls are hidden behind tall stacks, resulting in blind spots for secure visibility. Additional services and program spaces, such as a teen area, will require additional staff points for secure and safe operations. As the building construction does not allow for cost effective reduction in interior walls the only viable option is electronic security measures. While this will allow for staff to monitor remote areas it also does not promote an environment of trust with the patrons. It also requires the staff to stay at their locations and reduces patron interaction. It is our experience that both of these are likely to result in a loss of patron comfort and satisfaction. Additionally, the desired creation of a teen space will not be as successful if teens feel like they are being continually monitored.





Parking: There are fourteen spaces directly adjacent to parking. The Geneva zoning ordinance dictates twenty-two spaces are required, however, a building of this size approximately 40+ spaces are recommended as well as four to five handicapped spots to allow for surge parking during events. Overflow parking can be moderated by the

availability of public parking in the area. It is interesting to note that in a parking lot of approximately 40 spaces the furthest one would walk to the main entrance is approximately 80 feet. Since the building is now limited to street parking one would walk approximately 300 feet to the 40th parking space if all spaces were dedicated to library usage. This is not the case and it is often reported that patrons walk far further to park or, worse yet, decide not to use the library on that day. An inability to park will often force patrons to use other local libraries, such as Batavia or St. Charles, as they have dedicated library parking.

Vehicular Access: In addition to the documented patron concerns about parking the current lot configuration severely limits vehicular access. The current location of book drop-off requires parking in a temporary loading zone in the parallel parking area in the front. It also requires those drop off locations to be in an operationally inconvenient location necessitating a book lift to get books to circulation space for processing. Another note is that although the building has a loading dock it is not usable by van access, the LINC library consortium van will park in the front of the building for deliveries and stage books and packages in the lobby. A new building would have a dedicated delivery access zone so as not to impact patrons. The current loading dock even if reconfigured would not be accessible as it is only approachable by using the City Hall parking lot. This blocks parking spaces and is not a tenable solution. Finally, it is interesting to note that due to the multiple split levels of the building there are two book lifts and one elevator. No book lifts access the lower level so all deliveries or circulation access is through the patron spaces or hand carried down the stairs.

MECHANICAL COMPONENTS

There is a central hot water heating plant consisting of two hot water boilers, pumps, air separator, expansion tank, etc. There is no chemical treatment pot feeder or side stream filter. The two boilers are Lochinvar CHN-0650 gas fired natural draft type, each with 650 MBH input and 546 MBH output. These boilers were installed in 1996 and are now 19 years old. Combustion air was originally drawn through the crawl space, but has since been blocked off. Hot water is circulated to building heating elements consisting of variable air volume boxes with hot water coils, finned tube radiation, convectors, suspended unit heaters, cabinet unit heaters, etc.

The entire occupied area of the building is cooled, but there is no central chilled water plant. The building is cooled and ventilated by two Trane YCD 420 gas fired heating/cooling variable air volume packaged rooftop units with nominal 35 tons cooling capacity and 350 MBH input heating capacity. These units are located on a flat portion of the roof accessible by climbing into the wood truss attic and then out a hatch. They are 19 years old and have reached the end of their life cycle. One of the units currently has a bad control board and it is expected over the coming years maintaining serviceability will become increasingly expensive. Eventually this will result in a necessary replacement of the units at

significant GPLD expense. It is anticipated that the serviceable remaining life is 3-4 years.

Air is delivered from the rooftop units through ductwork distributed in the wood truss attic to approximately 24 Carnes AVWD single duct variable air volume (VAV) boxes with hot water coils. Each VAV box has an associated thermostat and is dedicated to serving a room or group of rooms with the thermostat location determining which space controls the temperature in all spaces served by the box. All of the VAV boxes serving the first floor are located in the wood truss attic as is the hot water piping which is connected to the VAV box coil. Access to them varies from very inconvenient to impossible. This inability to access the units greatly reduces the lifecycle of the units and it is anticipated there will be ongoing issues with the units in the foreseeable future. Insulation for the roof has been located on the first floor ceiling, which means the space is intended to be a "ventilated cold attic" - essentially the same as outside air temperature. There is some batt insulation and at some point, insulation was also blown in on top of everything - including VAV boxes. There are some plywood planks installed, but lighting and floor access to the VAV boxes is limited. Much of the main hot water supply and return piping is exposed to attic temperature above the insulation. There have been no reports of the piping freezing which is probably due to the discontinuous insulation at the ceiling allowing heat from the building up into the attic. The end result of the inefficient installation of insulation and location of the units means that the units are operating more than required to maintain tempered conditions within the library. In current terms mechanically the building is operating at an extremely low level of energy efficiency.

The thermostats control space heating by modulating a 3-way control valve at each VAV box. These control valves have been failing because they were installed upside down. This would normally be an easily repairable situation however due to the installed condition, as described above, repair is not tenable.

The administration area has been reconfigured to provide interior and perimeter rooms, but the thermostat controlling the VAV box is now located in one of the interior spaces which causes problems controlling the temperature in the perimeter rooms. This is evident by the inclusion of electric fin tubes located in a number of the rooms. These fin tube heaters are not energy efficient and would not be used in energy compliant building design.

The lower level IT office does not have any mechanical ventilation. This results in stale air and difficulties in controlling indoor air quality.

The MDF room is served by a newly installed Carrier Duct Free Split System with an indoor fan coil and an air cooled condensing unit located on the roof.

All temperature controls associated with the rooftop units and VAV boxes are pneumatic. The pneumatic control system is served by a simplex temperature control air compressor with associated refrigerated air dryer. There are no direct digital controls in the building.

ELECTRICAL COMPONENTS

Electrical Service: The existing electrical service is a 1000A, 120/208v. 3 phase 4 wire service rated distribution switchboard fed from the local municipal owned electrical utility. The meter is exterior to the building in the adjacent alley. The main switchboard and associated distribution panels are manufactured by GE (General Electric), installed in 1995 and are in good condition. Replacement switches are readily available and still currently manufactured for this equipment. There are spaces and spare switches available in the distribution boards for some interior renovations. The main grounding electrode from the switchboard to the incoming water service pipe appears to be terminated in a manner not in compliance with the National Electric Code.

Electrical Power Distribution: Power for motors, receptacles, and lighting is distributed throughout the building via branch circuit panelboards located in storage rooms, closets and mechanical spaces on the lower level. There are no panel boards on the upper level of the building. Panels are circuit breaker type with the exception of panel EM-A which is screw-in plug fuse type. All circuit breaker panels are manufactured by GE or Square D. The GE panels date from 1995 and are in good condition. The Square D panels are older, but are also in good condition. Replacement breakers are readily available and still currently manufactured for this equipment. There are very limited spare breakers and spaces available in the existing panel boards for future expansion. Additional loads will likely require new panel boards to be installed at considerable expense. If future expansion is deemed necessary a load study is recommended to determine the viability, and extent of, any expansion. Limited back up power is provided to a panelboard serving

the IT services via a small UPS (Uninterruptible Power Supply). The UPS provides back up power for a short amount of time, approximately 10-15 minutes.

Interior Lighting: The majority of interior general purpose light fixtures are T8 fluorescent. A limited number of HID (High Intensity Discharge) fixtures are located in one of the upper level stack areas. Column mounted accent fixtures in the upper area open work space are incandescent fixtures with retrofit compact fluorescent lamps. Some lower areas of the lower level stacks have incandescent track lighting fixtures installed and are currently utilizing retrofit compact fluorescent lamps. A limited number of LED light fixtures are located in the lower level. Limited occupancy sensor controls are located in the building with no daylight harvesting controls installed in the building. The lower level meeting room contains a dimming system, however the system appears to be not functioning properly. The attic space of the building is poorly lit, with almost no fixtures installed which makes repair work to existing HVAC units in the attic difficult.

Exterior Lighting: There are very few exterior light fixtures installed on the building and all contain incandescent or HID sources. All fixtures appear to be controlled by a time clock. Lighting for the building mounted sign utilizes an incandescent fixture powered by an extension cord and plug in timer.

Emergency Lighting & Exit Signs: Emergency lighting and exit signs are located throughout the building. Reserve power for emergency lighting is provided via integral batteries within the emergency light fixtures and exit signs. Two exit signs near the upper level open work area were noted to be incandescent with no internal battery back up.

Fire Alarm System: The fire alarm system is a conventional zoned system with a Simplex 4005 microprocessor based Fire Alarm Control Panel. The panel is currently supported by Simplex with replacement parts currently available, however Simplex has released a replacement panel and thus support for the 4005 panel may cease in the near future. At that point a full replacement of the fire alarm system will be required at a considerable expense to GPLD. While smoke and heat detectors are distributed throughout the building, there are a number of locations that require additional detectors. Audio and visual notification devices are located throughout the building, however they are currently not synchronized and as such do not meet ADA standards.

I.T. System: The information technology system consists of data and phone jacks distributed throughout the building and are a mixture of Catagory 5e and Catagory 6A cables and jacks. The system has been updated on an as-needed basis.

PLUMBING COMPONENTS

There are multiple sewers exiting the building. This is an atypical installation and would not be allowed under current code. Any modifications to these systems will necessitate bringing them into code. This would require sewage ejector pumps and demolishing portions of the lower level floor to re-route the sanitary to the proper exit point. Storm and sanitary sewers are separate within the building. The sewer pipe materials and condition are unknown, but as there are no complaints piping is believed to be in good condition. The building sewer systems do not have any reported problems with backups or flooding of rooms on the lower level.

Domestic Water Service and Piping: The domestic service enters the building in the basement as a combined 6" service which splits to a 2" domestic water service and a 4" fire protection service. The domestic water meter is located at the service entrance. The existing water service has a 2" RPZ type backflow preventer. The water piping distribution system appears to be in good condition throughout the building. The water distribution pipe is believed to be primarily copper piping.

Domestic Water Heating: A majority of the building domestic hot water is produced by a single Reliance electric 40-gallon tank type water heater which is approximately 3-5 years old. Areas of the building in the 1995 addition utilize small under-counter electric water heaters located at the fixtures that require hot water.

Basement Pump Systems: There are three pump systems located in the lower level. The first is a simplex sanitary pump system and basin that serves the elevator drain needs. The elevator pump is located in the elevator equipment room. Per current elevator code this would not be allowable. At the point where there is an elevator renovation this would need to be modified to meet current code. In order to do so the library would lose functional space and thus reducing library programming and service opportunities. The second is a simplex sanitary pump and basin that serves the workroom sink and is located in the storage room directly adjacent to the work room. The third is a simplex sanitary

pump system and basin that serves the janitor closet service sink in the maintenance staff office area. These split systems are a consequence of multiple renovations over the years. It would be recommended that any future renovations or expansions this be consolidated to one sanitary pump. This would require removal of large portions of the basement floor to re-route the underground plumbing and an expansion of the boiler room to house the pump systems.

Plumbing Fixtures: The plumbing fixtures throughout the building are in good to very good condition as they have been well maintained. They are nearing the end of their useful life due to the extended period of use, and as such, extra care should be taken to prevent sudden failures. Water closets throughout the public areas are wall hung type with manually operated flush valves. Urinals are wall hung type with manually operated flush valves. Lavatories are counter mounted bowls with self closing manual faucet control throughout the building. Electric water coolers are located throughout the building. Staff sinks are porcelain double bowl sinks with manually controlled faucets. None of the fixtures are compliant with current low water use consumption requirements as well as sanitary considerations that often result in automatic flush valves installed on all fixtures.

Plumbing fixtures for hand washing lack thermostatic mixing valves. This is a violation of current building codes and potentially results in opportunities for scalding if care is not taken to carefully, manually, monitor the water temperatures.

FIRE PROTECTION COMPONENTS:

The fire and domestic water enter the building in the lower level mechanical room as a 6" combined service at the ceiling. The 6" combined splits into a 2" domestic water service and a 4" fire protection service. The fire service drops to floor level and is routed to the north side of the room. At the north side of the mechanical room the fire service passes through a backflow preventer with metered bypass then splits to feed a wet system for the lower level and a dry pipe sprinkler system for the upper level and attic spaces. A pressure gauge on the inlet water line indicates water pressure of approximately 70 PSI. The dry pipe valve and compressor are located directly adjacent to the fire protection backflow preventer.

A fire department connection is located on the south face of the building towards the west side. Fire department connection piping is routed to west fire side of backflow preventer.

Lower level areas of the building are protected with an automatic wet pipe sprinkler system. This piping system is full of water under pressure that will release the water to suppress a fire when the temperature sensitive bulb in a sprinkler head is activated by heat.

The upper level and attic space is protected with a dry pipe sprinkler system. This piping system is full of air under pressure that will release a valve that allows water to enter the piping system when the temperature sensitive bulb in a sprinkler head is activated by heat. This allows the sprinkler piping to be routed through unheated areas and avoid the problem of pipes containing water that could freeze and burst the pipes. Dry pipe systems are prone to condensation issues and must be inspected with regularity to verify that the system is operating properly and not corroding prematurely. A corroded pipe or fitting can result in an unexpected loss of air pressure thus allowing the water to flood the affected area.

ACCESSIBILITY SURVEY:

The ADA survey is a basic survey to identify areas of concerns and budget costs to resolve those issues. The form of this portion of the document is mirrored on the Illinois Accessibility Codes Site Inspection Checklist. This review is in comparison to the most current version of the Illinois Accessibility Code in effect at the time of the survey. If the library decides to pursue this effort of coming into full compliance with the Illinois Accessibility Code, then a full detailed analysis is suggested. Additionally, GPLD will be required to bring the building into full compliance with any significant renovation undertaken in the future. A final note of consideration, while accessibility is often thought to be limited to those in wheelchairs it also applies to those with any level of mobility, or other impairment issues. A large component of the current active patron base for GPLD is comprised of senior citizens, as such it is highly recommended that GPLD make a concerted effort to come into compliance. One final note, while technically not a user group that must be kept in mind with this review families with strollers or a large number of younger children. They do not necessitate compliance but any obstacles to use will affect their ability to have a positive library experience.

BUILDING AND SITE REVIEW

Parking and Site:

The main entrance to the building is serviced by street side parking. There is one street side handicapped parking space with no accessible curb cut or sidewalk nearby to provide access. This technically is not a compliant space. Patrons confined to a wheelchair must exit their vehicle onto a sloped street and navigate up driveways to access the walks to the library entrance. Additionally, this parking space does not have the required free zone to allow for compliant loading of a vehicle. It needs to be recognized that if the building were to be built new, the building would require a parking lot of approximately twenty-two spaces and 2 additional spaces would require to be designated handicapped parking. This is far short of the generally accepted amount of parking needed for a facility of this size.

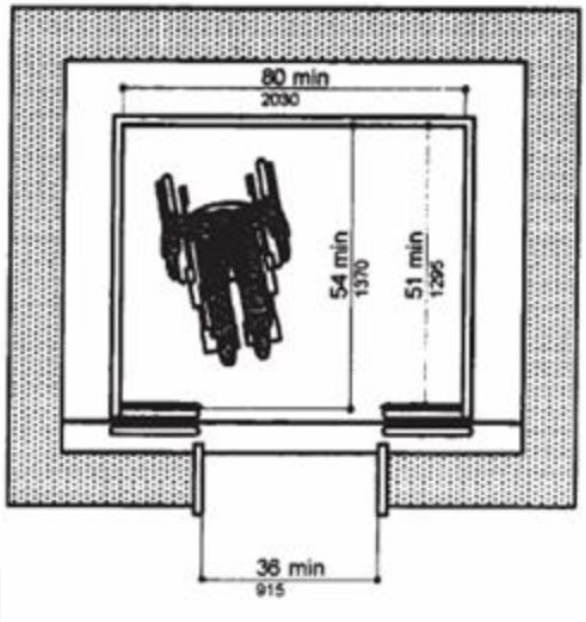
Sidewalks are uneven and have slopes that exceed the ADA allowances. Additionally, the sidewalks have heaved in some areas creating a surface that may result in uneven footing. This may cause an issue with people with canes, unsure footing, or walkers.

The entrance to the building is at grade with an automatic door operator to allow for access. The operator paddle is located in a spot that only allows a side reach to the unit. This issue is a prime example of where patrons pushing strollers or in walkers do not have a stable location that both provides access to the push button with the ability to quickly and safely enter the building.

These issues are only exacerbated in the snowy winter months as a majority of the access to the building is across walkways that are not the responsibility of the GPLD facilities staff to maintain. All issues noted above are only exacerbated during inclement weather.

Elevator:

The current elevator does not meet current Illinois Accessibility Code requirements. The elevator opening is less than the 36" minimum requirement and the interior minimum dimension is not compliant as well. In order to become code compliant a full removal and replacement would need to occur with significant impact on the surrounding structure, as well as floor area. This impact on the floor area would have a detrimental impact on library operations.



Pedestrian Ramp:

On the lower level there are two ramps that provide access to the children's stacks. These ramps are non-compliant due to excessive slope, as well as lacking handrails. On the primary entrance the ramp is in front of the elevator machine room with inadequate landings at the base; as such a new ramp routing will need to be configured. The secondary ramp will need to be reconfigured as the upper landings do not meet the size requirements nor does the ramp have handrails with proper extensions on both sides of the ramp.

Doorways:

Multiple doorways in the facility do not comply due to lack of clearances. A sampling of the doors are as follows:

- *All toilet room doors*
- *Secondary ramp to children's area*
- *Door to lounge*
- *Kitchen doors*
- *Door to circulation due to proximity of storage shelf*
- *Door to adult reference office*

It is also a requirement to have tactile warning strips on all door handles of potentially hazardous rooms. These rooms include the elevator machine room, electrical closets, as well as the mechanical room.

Restrooms:

All of the restrooms do not meet minimum ADA compliance for multiple reasons. They vary from in-accessible sinks and clearances within and around the plumbing fixtures. All of the doors to the spaces also do not meet the current compliance requirements. Coupling that with the fixtures and finishes are in excess of their expected life, a total renovation is recommended.

Signage:

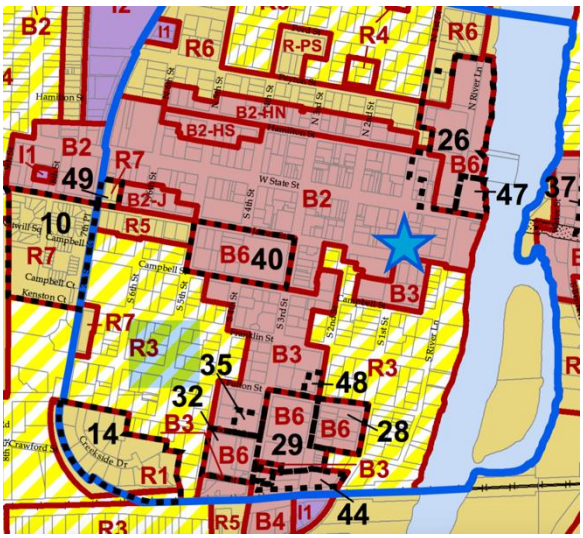
All signage will need to be replaced to meet ADA standards. This would include new visually contrasting type as well as braille components to the signage.

Book Stacks and Shelving:

Generally, the shelving and stacks meet the minimum clearance requirements. The issue is with respect to codes that the ends of the aisles need to have a 60” turning radius to allow for proper egress. As such, the recommendation is to modify the current stacks. In some locations the egress width has been reduced to less than 36” due to furniture and other obstructions.

CODE AND ZONING ANALYSIS:

This section is intended to provide some context for future potential expansions of the existing building. Numerous structural and building layout concerns abound preventing a cost effective expansion. This section will provide some context for requirements placed on this site by the City of Geneva.



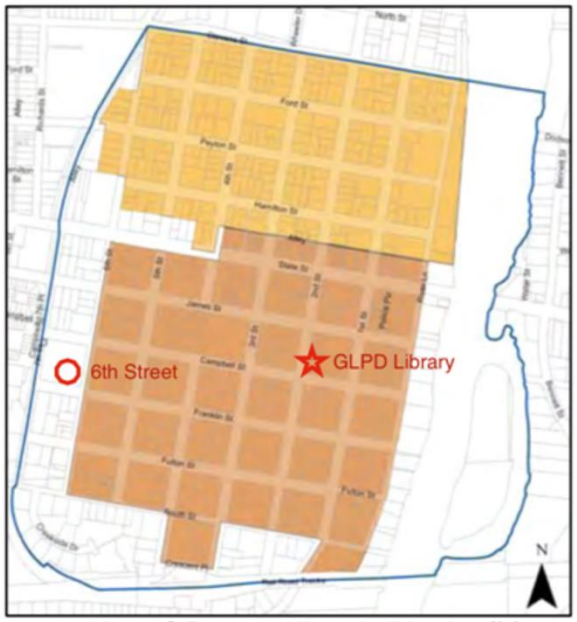
This property is zoned B2 by the City of Geneva. This means it has the following limitations.

- *The maximum floor to site area ration is 3.00. The current footprint of the property is approximately 20,000 square feet. This means that the maximum building square footage on this site would be 60,000.*
- *The setbacks for this site are all zero feet. Therefore, any additions would be allowed to be congruent with the property lines. However, it must be noted that this is the edge of the downtown area and while allowable is not a recommended resolution to obtaining additional space.*

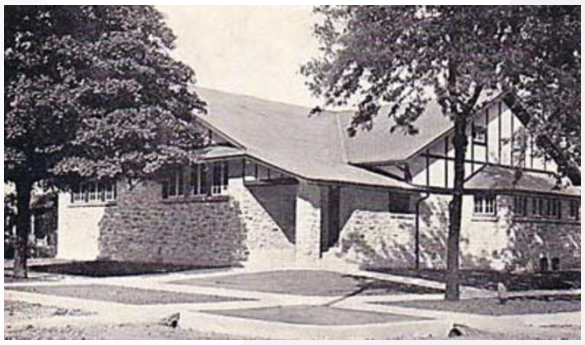
- *The maximum building height is 40-0". It is estimated that the current library is 33'-0." The height of the first floor ceilings are approximately 26'-0" off of the exterior grade. This means that there is less than 14'-0" available for a new story. Given a typical above ceiling plenum is approximately 3'-0" for floor and roof levels a remainder of 8'-0" is left for a 3rd story "occupiable" space. This is not a tenable height for any occupancy. As such a significant renovation resulting in significant patron inconvenience and library closure would be required to obtain any additional usable square feet.*

HISTORICAL CONSIDERATIONS:

The James street site will require special review by the City Historic Preservation Commission (HPC). The building is located in the South Historic District which is listed on the National Historic Registry. This means those guidelines will be directly applicable and the need for maintaining those features will likely restrict covering them up with new construction. Costs escalate when trying to maintain and protect designated historic elements which is not yet calculated within the costs considered thus far.



In summary any expansion on the site is limited by first needing to keep any elements the HPC regards as needing preservation, which is likely the exterior of the building, and limited by restrictive maximum area allowances and height restrictions by the applicable zoning codes. While we might be able to hit the suggested size it would not be of the quality one would expect from the District or its Architect.



RECOMMENDED RESOLUTIONS:

RECOMMENDED WORK TO RESOLVE BUILDING DEFICIENCIES:

Architectural:

- *Damp-proof crawlspace below.*
- *Replace windows, doors and frames.*
- *Revise attic to conditioned space per MEP assessment.*
- *Casework refinish and replacement.*
- *Remove all fiberglass blanket and blown-in insulation in attic and provide insulation at roof to create a conditioned above ceiling space where a cold ventilated attic was previously. Provide flooring in above ceiling space to gain access to all VAV boxes for service.*
- *Remove all ivy and overgrowth and repair, or tuck-point, the exterior envelope as necessary.*

Mechanical:

- *The 3-way control valves serving the hot water coils at the VAV boxes have been installed upside down which has contributed to their early failure. Provide new control valves and hot water piping arrangement at each VAV box.*
- *At administrative offices, correct temperature control issues caused by new walls creating distinct perimeter and interior thermal zones by adding another VAV box with thermostat and reconfiguring ductwork.*

- *Provide a new VAV box to serve the IT office which currently has no mechanical ventilation.*
- *Remove existing pneumatic temperature control system and provide new Building Automation System utilizing direct digital control (DDC).*

Electrical:

- *Future circuits will require the addition of new panel boards due to the lack of available spare breakers and spaces. New panel estimated to be 200A.*
- *Consideration should be given to providing a longer term backup power for the IT department by installation of an emergency generator. New generator estimated to be 50KW.*
- *The main grounding electrode conductor should terminate at a below grade metallic water pipe within five feet of entering the building. A bonding jumper should be installed over the water meter.*
- *Although the lighting levels appear adequate in all areas, consideration should be given for replacement of incandescent and HID light fixtures for energy savings. Additionally, fixtures with interior HID lamps should be considered for replacement as variations in color of the lamps result in unappealing color rendering differences of ceilings within the same area of the building.*
- *Mechanical equipment is located in the attic and there is no permanent lighting in the attic to utilize when servicing the equipment. We recommend installing attic lighting.*

- *Replacement of exterior lighting sources with new HID fixtures should be considered for energy savings.*
- *The exterior sign light is utilizing materials and methods meant for temporary use. These temporary materials should be removed and a permanent fixture should be installed.*

- *Long term planning for energy efficiency should include installation of occupancy sensors in all private offices and installation of daylight harvesting system in spaces where adequate daylight is present.*
- *Consideration should be given to replacing the Meeting Room lighting control system.*
- *Two incandescent exit signs that are not currently battery backed should be replaced with new signs that are.*
- *Code requires the installation of additional battery backed emergency light fixtures in a few locations where none currently exist.*
- *As the factory support for the existing fire alarm system may end in the near future, consideration should be given to complete replacement of the fire alarm system to an addressable system and ADA compliance.*

Plumbing:

- *Add thermostatic mixing valves to comply with current building code and recommended safety standards.*
- *The domestic water service backflow preventer does not appear to have a yearly testing certificate. Domestic water service backflow preventer should be tested and certified.*
- *The domestic water make-up line to the building hot water heating system does not have an approved reduced pressure backflow preventer device as required by code. Install new 3/4" RPZ type backflow preventer and associated supply and relief piping.*
- *The electric water cooler located outside the group toilet rooms on the lower level of the building appears to run without shutting down. During the 15 to 20 minutes the cooler was observed, the compressor cooling unit ran without stopping. This is wasteful of electricity and may be a sign the cooler is failing and not able to maintain temperature. Electric water cooler should be replaced with a new unit. Existing waste and water piping will remain and new electric water cooler can be installed in same location.*

Fire Protection:

- *Fire protection backflow preventer does not appear to have a yearly testing certificate. Fire protection backflow preventer should be tested and certified.*
- *Fire protection dry pipe system compressor is not mounted to the floor or any support. Compressor should be secured to concrete floor or unistrut support.*

RECOMMENDED WORK TO RESOLVE ACCESSIBILTY ISSUES:

- *Procure additional land for parking.*
- *Designate additional ADA spaces.*
- *Provide accessible route to front of building with sidewalk and concrete repair and replacement.*
- *Removal and replacement of the elevator with additional modifications to building structure.*
- *New ADA ramps with compliant handrails and landings.*
- *Reconfiguration of surrounding space of doors without adequate clearances.*
- *Ramping or accessible route to lower Circulation desk from circulation department.*
- *New ADA accessible toilet rooms in all spaces. This includes the toilet rooms in the children's areas, main floor public restrooms, staff restroom in the rear area, as well as the public restrooms on the lower level. There are no accessible toilets at the entry level.*
- *New ADA compliant signage at all rooms.*
- *Modify existing stack configuration to allow for code required egress.*

COST BUDGETS:

Discipline	Type	Issue	Cost
Architectural	ADA	Provide ADA walks and ramps outside	$15,000
Architectural	ADA	Elevator Modernization	$350,000
Architectural	ADA	Ramp reconfigurations	$85,000
Architectural	ADA	Door Reconfigurations	$72,000
Architectural	ADA	New ADA compliant signage	$12,000
Architectural	ADA	Renovate toilet rooms	$324,000
Architectural	ADA	Provide additional parking	$1,500,000
Architectural	Building	Dampproof Crawlspace	$250,000
Architectural	Building	Replace all doors, windows and frames	$350,000
Architectural	Building	Renovate attic to insulated space with spray insulation	$400,000
Electrical	Building	New panelboard to provide future capacity	$8,000
Electrical	Building	Backup Generator for IT and Lighting	$100,000
Electrical	Building	New lighting upgrades	$45,000
Electrical	Building	Revise exterior lighting	$8,000
Electrical	Building	Replacement of Meeting Room lighting control	$12,000
Mechanical	Building	Replacement of hot water boilers	$130,000
Mechanical	Building	New 3 way control valves	$65,000
Mechanical	Building	Correct Temperature Issues in Admin areas	$15,000
Mechanical	Building	Provide new VAV at IT room	$15,000
Mechanical	Building	Remove and replace temperature controls	$150,000
Mechanical	Building	Provide hot water heating system treatment	$8,000
Mechanical	Building	Replace RTU's	$150,000
Plumbing	Building	Water Cooler replacement	$5,200
Architectural	Code	Renovate kitchen	$185,000
Architectural	Code	Revise shelving layout	$65,000
Electrical	Code	Revise grounding system	$5,000
Electrical	Code	Attic lighting	$10,000
Electrical	Code	Revise electrical for exterior sign	$4,000
Electrical	Code	Provide occupancy sensors for lighting	$8,000
Electrical	Code	Replacement of exit signs	$6,500
Electrical	Code	Replace existing fire alarm systems	$65,000
Fire Protection	Code	Install backflow preventer at incoming service	$1,000
Fire Protection	Code	Secure compressor to floor	$1,000
Plumbing	Code	Add Thermostatic mixing valves	$25,000
Plumbing	Code	Provide backflow preventer	$1,000
Plumbing	Code	Provide RPZ on domestic water make up line	$3,500
		Grand Total	$4,449,200