Executive Summary

Introduction

This Facility Analysis Report was commissioned by the Des Plaines Valley Public Library District in early 2008 to determine the current condition of the Library System's two existing Branch Library facilities in order to assess their future viability in providing adequate services for the public. PSA-Dewberry, a national architecture and engineering firm specializing in planning and design of Library facilities, was selected to conduct and complete the Analysis and this Report.

Methodology

The Analysis commenced with information being gathered via a site investigation at each of the System's Branch Libraries that included informal discussions with staff.

Lockport Branch Findings:

Architectural and Structural Assessment

- **Accessibility**

  The building is in need of several modifications to bring the facility into full compliance with the current Americans with Disabilities Act (ADA), The Illinois Accessibility Code, and Life Safety Codes. Most significantly, the building has no elevator and inadequate Life Safety Egress stairs. The entire upper level is inaccessible to the handicapped. At some juncture in the future, the grandfather clause allowing the facility to operate as originally constructed will expire, and all Staff and Public areas will have to be upgraded to conform to the current codes.

- **Roof**

  The poor condition of the roof membrane is causing leaking and moisture migration into the building resulting in water damage. Due to the inadequate slope provided there is significant ponding of water on the roof that exacerbates this problem. Also, there is minimal insulation provided beneath the roof membrane and it appears that much of it is moisture saturated evidenced by the bubbling of the roof membrane and the softness underfoot that was observed.

- **Exterior Walls and Structure**

  The building's structure appears to be sound with a few noticeable settling cracks in the masonry that appear to be incidental to minor differential settlement that occurred and ceased significantly prior to the date of the site investigation. The second floor brick column enclosures show some discoloration likely due to water infiltration. PSA-Dewberry would surmise that this water infiltration is related to

the poor condition of the roof and not the exterior wall due to the fact that there is no similar discoloration visible on the lower level.

- **Asbestos**

  The Asbestos Management Plan done in 1995 identifies floor tile/mastic and the coating applied to the exposed concrete structure as asbestos containing materials. While no abatement is necessary as long as these materials are not disturbed, any future renovation work in these areas would necessitate that remediation work take place prior to the work to prevent creating a friable situation that would release the asbestos fibers into the surrounding environment.

- **Parking Lot**

  The parking lot is in serviceable condition with some patching and areas of multi-directional cracking evident. It appears that minor patching and sealcoating could preclude any need to repave the entire lot for up to ten years or more.

Mechanical Assessment

- **Ventilation and Heating**

  The building is served by two gas fired packaged rooftop units, one serving the first floor and the other the second floor. The general condition of both units is poor. The gas fired heat exchanger on the first floor rooftop unit was recently replaced. The condenser coils on both units are dirty and damaged. There is significant rust on the exterior casing of both units. The rooftop unit serving the second floor is located approximately within 6'-0" of the edge of the roof which is a code violation. Water is collecting on the exposed ductwork on the roof which is promoting corrosion. Exhaust fans located on the roof are in fair to poor condition. The electric duct coils and electric perimeter heating units are turned off. Heating for the building is provided solely by the rooftop unit gas fired heaters limiting control of space temperatures. The electric wall heater in the men's toilet is in poor condition and is not working. The second floor janitor's closet is currently being used for storage. The room is cold and does not appear to have heat. The cabinet unit heaters in the vestibules are in fair to poor condition.

- **Controls**

  The original Honeywell controls for the rooftop units have been disabled and have been replaced with White Rogers programmable thermostats. The original Honeywell controls for the building are partially utilized. The building is slowly being converted to digital controls.

- **Plumbing**

  The water service is located on the first floor near the receiving room and includes a water meter but not a backflow preventer. A backflow preventer is required per the State of Illinois Plumbing Code. The domestic hot water is provided from a 40-gallon electric water heater that is located on the first floor in a storage room. The hot water is not tempered with an approved ASSE thermostatic mixing valve for hand-washing sinks. The first floor public toilet rooms are provided with handicapped height plumbing fixtures. The second floor public toilet rooms and the staff toilet room are provided with regular height plumbing fixtures as the second floor is not accessible. There is an electric water cooler on each floor and they are not handicapped accessible. The second floor toilet rooms are not provided with a floor drain. Floor drains are required in each toilet room per the State of Illinois Plumbing Code. There is a janitor's sink located on each floor but the sink on the first floor does not include a vacuum breaker spout which is required on the faucet per the State of Illinois Plumbing Code. The building is not provided with a fire suppression system.

Electrical and Technology Assessment

- **Technology**

  Provisions to accommodate current and updated technology, voice and data systems, etc. have become problematic due to the permanency of the building's structure and partitions.

- **Electrical Service**

  The building is served by 3 service entrances, one for general service, one for electric heating and one for lighting. The 600 amp main panel is original, has no capacity and spare parts would be very difficult to find or replace. The branch panel boards are also original to the facility. The Branch panel boards also generally lack any spare capacity and replacement breakers would be very difficult to find or replace.

- **Emergency**

  The emergency power is simply a wiring tap connected ahead of the main service disconnect. This is not a true emergency system but will continue to deliver voltage in the event the main service disconnect or any other downstream disconnect trips (opens the circuit). The night lighting is connected, un-switched, to the emergency panel noted in item 3 above. These night lights are not true emergency lights. Operational emergency lighting is in the form of emergency battery units do not meet the requirements of NFPA 101 Life Safety code for light levels and uniformity.

- **Lighting**

  General lighting is a newer T8 lamp system and is an upgrade to the original T12 system. Lighting levels meet minimum requirements at night. The existing lighting loads may exceed the maximum load density defined in the new energy code and the lighting controls generally do not meet the new code requirements (note existing facilities do not have to meet new codes unless a substantial remodel is performed on the facility). Exterior lighting is controlled by a time switch and is older equipment but appears to operate properly.

- **Fire Alarm**

  Fire alarm system appears to be original. There are ADA strobe units generally throughout, however, they likely do not meet the latest codes for spacing and intensity.

Crest Hill Branch Findings:

Architectural and Structural Assessment

- **Accessibility**

  The building is in need of several modifications to bring the facility into full compliance with the current Americans with Disabilities Act (ADA), Illinois Accessibility, and Life Safety Codes. Most significantly, the building has no elevator and inadequate Life Safety Egress stairs. The entire lower level is inaccessible to the handicapped. Also, the exterior handicapped ramp access to the building is showing the first stages of water and freeze-thaw damage. At some juncture in the future, the grandfather clause allowing the facility to operate as originally constructed will expire, and all Staff and Public areas will have to be upgraded conform to the current codes.

- **Roof**

  The roof membrane appears to be intact and in generally good condition, however, due to the inadequate slope provided, there is significant ponding of water on the roof in many areas. Also, there is minimal insulation provided beneath the roof membrane and it appears that some of it is moisture saturated evidenced by some softness underfoot that was observed.

- **Exterior Walls**

  The building's structure appears to be sound with a few noticeable settling cracks in the masonry that appear to be incidental to minor differential settlement that occurred and ceased significantly prior to the date of the site investigation. .

- **Asbestos**

  PSA-Dewberry has not been able to review a copy of the Asbestos Management Plan for this Library branch, however, based upon previous experience, there appears to be floor tile/mastic that is likely to be asbestos containing material. While no abatement is necessary as long as this material is not disturbed, any future renovation work in this area would necessitate that remediation work take place prior to the work to prevent creating a friable situation that would release asbestos fibers into the surrounding environment.

- **Parking Lot**

  The parking lot is in excellent condition and any need to repave the entire lot would not be expected for more than ten years.

Mechanical Assessment

- **Ventilation and Heating**

  The building is served by five (5) gas fired packaged rooftop units, each serving a specific zone of the first floor. General condition of units is fair to poor. The condenser coils on all five units are dirty and damaged. There is some rust on the exterior casing of all units. The rooftop units are approximately 8 years old and have a few more years of usable life expectancy but the warranty on the compressors has been exceeded and frequent compressor replacement can be expected. A gas fired furnace with a DX cooling coil is located in the basement mechanical room and serves the basement level of the building. The furnace appears to be original to the building making it approximately 39 years old and well beyond its useful life. The condensing units serving the furnace are located on wall brackets outside and are in poor condition. One rooftop unit is less than 10'-0" from the edge of the roof which is a code violation. Exhaust fans on the roof are in good to fair condition. Rust can be seen on some of the exposed ductwork which is a sign that moisture is in the system. It is likely that rust has formed on the interior of the ductwork as well.

- **Controls**

  The original controls for the rooftop units have been disabled and have been replaced with Robert Shaw programmable thermostats.

- **Plumbing**

  The water service is located in the basement mechanical room. It includes a water meter but not a backflow preventer. A backflow preventer is required per the State of Illinois Plumbing Code. The domestic hot water is provided from a 38-gallon gas fired water heater that is located in the basement mechanical room.

The hot water is not tempered with an approved ASSE thermostatic mixing valve for hand-washing sinks. The first floor public toilet rooms are provided with handicapped height plumbing fixtures. The basement public toilet rooms and the staff toilet room are provided with regular height plumbing fixtures as the lower level is not accessible. There is an electric water cooler on each floor and they are handicapped height. None of the toilet rooms are provided with a floor drain. Floor drains are required in each toilet room per the State of Illinois Plumbing Code. There is a janitor's sink located on both floors and the sink includes a faucet with a vacuum breaker spout. The sanitary waste located below the basement floor is routed to a sewage ejector located in the basement mechanical room. The discharge piping is pumped up into the gravity sewer system. The sewage ejector was once a duplex system but one of the discharge pipes has been disconnected and capped. Only one pump is required to handle the number of plumbing fixtures in the basement. The basement has perimeter drain tile routed to a sump pump basin located in the basement mechanical room. The discharge piping is pumped up and out through the wall and discharges onto grade. A second sump has been installed in the closet of the staff lounge in the basement. The pump basin lid in the mechanical room has been removed and a condensate drain has been piped on the floor and drains into the top of the basin. The condensate drain needs to be piped to a floor drain with an air gap. The sump basin lid needs to be reinstalled. The building is not provided with a fire suppression system.

Electrical and Technology Assessment

- **Technology**

  Provisions to accommodate current and updated technology, voice and data systems, etc. have become problematic due to the permanency of the building's structure and partitions.

- **Electrical Service**

  The building is served by a new 600 amp service entrance which replaced the existing service just a few years ago. The new service has additional capacity for additional loads. The branch circuit panels have also been replaced with new panels recently and spare capacity exists in all of the branch panels. General purpose receptacles are sparse and additional outlets have been added as needed utilizing surface raceway and surface boxes. Several high density load areas lack quantity of receptacles and extension cords are in extensive use.

- **Emergency**

  The emergency power is simply a wiring tap connected ahead of the main service disconnect. This is not a true emergency system but will continue to deliver voltage in the event the main service disconnect or any other downstream

disconnect trips (opens the circuit). Night Lighting is connected, un-switched to the emergency panel noted above. These night lights are not true emergency lights. Operational emergency lighting is in the form of emergency battery units do not meet the requirements of NFPA 101 Life Safety code for light levels and uniformity. .

- **Lighting**

  General lighting is a newer T8 lamp system and is an upgrade to the original T12 system. It appears lighting levels exceed minimum requirements with contribution of day lighting and likely meet minimum requirements at night. The existing lighting loads may exceed the maximum load density defined in the new energy code and lighting controls do not meet the new code requirements (note existing facilities do not have to meet new codes unless a substantial remodel is performed on the facility) General open area lighting is controlled by a single lighting contactor. This type of control does not allow selective switching of lighting for energy conservation. Exterior lighting appears to be controlled by a combination of photocell and time switch. Building mounted flood lights provide parking lot lighting and would likely not be permissible in a new facility because of high angle glare. .

- **Fire Alarm**

  Fire alarm automatic detectors are installed. This type of facility does not require detectors per the national fire alarm codes unless local jurisdiction supersedes the nation code. If detectors are installed, then they must be installed per the requirements of NFPA 72 which they currently are not. There are no ADA strobes in the facility. Nearly all publicly owned buildings have been required to be ADA compliant on all fronts.