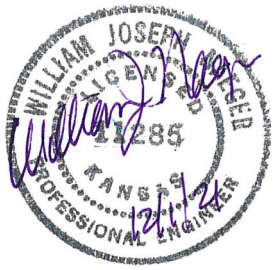
Assessment and Feasibility Study for Uptowner Parking Garage

7th and Jackson Streets • Topeka, KS

December 1, 2021

Bartlett & West

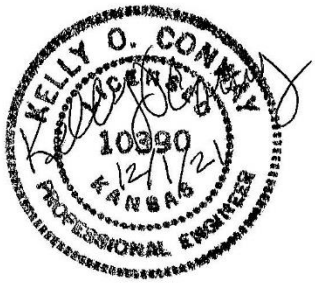
Professional Seal of Responsibilities



Project Manager

Architectural

Structural



Mechanical/Electrical/Plumbing

Fire Protection Sprinkler

Table of Contents **Page**

Executive Summary

Executive Summary

The existing Uptowner Parking Garage is over 60 years old and shows its age. While some maintenance has been provided over the years, it has not been to a level to avoid the need for major repairs and upgrades. In addition to the natural aging and wear on the facility, the building and safety codes have changed over the lifetime of the facility. Any major construction on the facility could trigger the city building code enforcement to demand upgrades in the life safety and ADA accessibility accommodations.

Recommended repairs and upgrades include the following:

Structural repairs and replacement	$2,700,000
Life safety upgrades	$ 360,000
(fire protection sprinkler, hose standpipes, basement ventilation system, fire alarm system and miscellaneous electrical items)	
Additional upgrades	$ 635,000
(restroom ADA upgrades, doors/hardware, ADA signage, HVAC equipment, storm drain repairs, lighting improvements, CCTV systems and entry systems)	
Professional services fees	$ 400,000
TOTAL estimated improvements costs	$4,095,000

The existing parking garage provides 300-320 parking spaces. In order to provide a minimum of 400 parking spaces, it was analyzed and determined that the existing parking garage structure cannot support the addition of more parking level on the roof of the existing facility. In order to provide 400 spaces, the demolition of the existing parking garage was considered and construction of a new, larger parking garage on this site was evaluated.

The estimated probable costs for a 400-parking space facility include the following:

Demolition costs	$ 2,500,000
Construction costs	$19,000,000
Professional service fees	$ 2,080,000
Total estimated costs	$23,580,000

The estimated probable costs for a 320-parking space facility include the following:

Demolition costs	$ 2,500,000
Construction costs	$16,000,000
Professional service fees	$ 1,780,000
Total estimated costs	$20,280,000

The decision by the City, and any private partners, as to whether the existing parking garage should be repaired or demolished and replaced with a new parking garage is both a financial decision, as well as a determination as to the number of parking spaces the City needs at this location. If 400 parking spaces are required, the existing facility

cannot satisfy this requirement, and a new parking garage can be constructed to meet this need. If available funds are limited and a parking garage is still necessary at this location, the structural and safety repairs must be completed and some of the other upgrades can be addressed in phases as funds allow. The existing parking garage could remain in service for another 20-30 years with the implementation of the recommended repairs and improvements, a regular maintenance program and prompt attention to future repairs.

Alternative 1:

Facility Assessments & Recommendations

Assessment of the existing facility

a. Architectural
    i. Summary of existing conditions

1. BUILDING CODE REVIEW

The existing facility was constructed under the Uniform Building Code, which has now become the International Building Code. The state of Kansas had not yet adopted a state code with universal application until the early 1990's. Accessibility was not addressed until 2004.

There are many compliance issues within the facility with respect to the latest adopted version of the state model codes. The need for compliance is the responsibility and the purview of the local municipality that enforces building codes, in this case, the City of Topeka. Typically, compliance can be triggered when a facility undergoes modernization/remodeling and/or an addition.
In addition to sections of the model codes addressing life safety, general, structural, mechanical, and electrical construction, the state has also adopted a model energy conservation code. In general, the current facility has not kept up with the continuous development of the model codes since its initial construction. The design team has not conducted an exhaustive code review, as this would typically be done during design phases, but has attempted to survey and categorize code deficiencies during the condition assessment as well as assign estimated costs for compliance.

In addition to the model building codes, other national and association life safety codes are adopted and enforced by state and local authorities having jurisdiction. If a major remodeling or reconstruction were to take place, it would be critically important to conduct meetings with these entities prior to design. These officials have the authority to enforce the codes at their discretion, and their interpretation can vary from one group or jurisdiction to another. Despite the best intention of those responsible for writing the model codes, the adoption of additional codes and standards and their subsequent application can still be confusing for most owners and design professionals, especially with respect to specialized use facilities.

2. AMERICANS WITH DISABILITIES ACT (ADA)

The existing facility toilet rooms and all existing door hardware are not in conformance with ADA compliance. The toilet rooms require a redesign along with installation of additional accessories to be considered ADA complaint. This includes items

such as partition walls, grab bars, lavatory and mirrors. Throughout the facility, the doors and door hardware present do not have ADA compliant hardware or proper ADA clearances. A code review of ADA clearances has not been performed as part of this report, but a full review is recommended to be performed with a building renovation. It is recommended that the doors and door hardware be replaced throughout the facility. In addition, ADA complaint room signage is not present in the facility and room signage should be added or replaced throughout the facility.

The door hardware throughout the facility, in addition to the ADA issues noted above, are also not in compliance with safety concerns related to building egress. A full code review of the existing facility has not been conducted but one would be recommended to be performed prior to a building renovation.

3. HAZARDOUS MATERIALS

Asbestos is known to be present in building materials in facilities constructed prior to 1977. The construction materials known to contain asbestos include floor tile, plaster, caulking, and grout. With the existing treatment facility being largely constructed in 1954, any modification or renovation of the existing facility will require asbestos testing, and, if present, asbestos abatement and removal procedures would need to be performed in advance. The need for associated asbestos abatement and removal is not known at this time.

4. ELEVATOR

An elevator was included with the construction of the facility in 1954 and was upgraded and replaced in the early 1990s. This elevator is a 2000-2500-pound freight elevator manufactured by Thyssen Krupp Elevator company. This elevator has been regularly inspected, maintained, and updated by Interstate Elevator, Inc.

ii. Recommended improvements

1. INTERIOR REMODELING

a. Office, Waiting and Toilet Area:

i. HVAC/Plumbing and Electrical upgrades in these areas will require new walls/ceilings and finishes to be installed.

ii. RECOMMENDATION: Replace finishes/ceilings etc. as needed for HVAC/Power and Lighting upgrades. Provide new ADA toilet area remodeling.

2. **CODE COMPLIANCE**
    a. Doors/Hardware:
        i. RECOMMENDATION: Provide new doors and hardware that meet current accessibility codes and standards.

    b. Signage:
        i. RECOMMENDATION: Provide new ADA conforming signage. Verify accessible parking stalls and accessible routes meet current codes.

iii. Estimates of probable construction cost for recommended improvements

1. **INTERIOR REMODELING**

ITEM A1: Replace finishes/ceilings etc. as needed for HVAC/Power and Lighting upgrades. Provide new ADA toilet area remodeling.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$175,000 - $200,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$22,000 - $25,000

ITEM A2: Provide new doors and hardware that meet current accessibility codes and standards.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$35,000 - $40,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$5,000 - $6,500

ITEM A3: Provide new ADA conforming signage. Verify accessible parking stalls and accessible routes meet current codes.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$25,000 - $30,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$3,000 - $4,000

b. Structural
    i. Summary of existing conditions
        1. The structure was constructed from construction documents prepared by Griest & Ekdahl dated 1955. The structure contains nine parking levels plus a basement. This structure is concrete framed with joist/slab, beams and columns. The partial height first level walls on the east and south elevation are clad with brick as are the elevator and stair towers. The north elevation is infilled with concrete masonry units. The basement floor is concrete slab on grade and the structure is founded on concrete spread footings. Construction documents for the Repair and Renovation of the Uptowner Parking Garage were prepared by Ekdahl, Davis, Depew, Persson / Architects dated 1981 with a revision date of 1982. This work was concrete and masonry repair, and the installation of a waterproof membrane system.

        2. Observations made confirmed observations made in June of 2020. Refer to Appendix A: Uptowner Parking Garage Assessment for Parrish – July 23, 2020. It is expected to have a 10% increase in deterioration since the 2020 study. Concrete deterioration was noted in the slabs, joist, joist stems, beams, columns and walls, and traffic coating. The traffic membrane installed in 1982 is completely worn out. There were several areas where chunks of spalled concrete were noted on the floor having fallen from deterioration above. These stalls should be barricaded. Noted deterioration on the exterior of the structure included failed joint sealants, open mortar joints, brick with spalled faces, cracked brick, failed elastomeric coating on the north concrete masonry unit infill wall, and areas of concrete spall in the spandrel beams. There is an area of spalled concrete on a spandrel beam on the west side of the northwest stair tower that should be removed before it falls for life safety concerns. Refer to photos and photo notes on Page 41 in Appendix B: Uptowner Parking Garage Photos – November 2, 2021.

        3. All of the noted deterioration is in some form related to moisture infiltration. When moisture reaches reinforcing steel, it corrodes. The products of corrosion occupy up to six times the original volume of the steel. The forces from the expansion of the rust products cause the concrete to crack and spall off. With the presence of salt this process is accelerated. When moisture enters a building material through an open mortar joint or a crack, it becomes trapped. Trapped moisture will

eventually freeze. Moisture expands as it freezes. Confined pressure from freezing water can reach nearly 15,000 psi. This causes cracks to get longer and wide, mortar joint to pop out and brick faces to spall. Repeated freeze-thaw cycles will eventually lead to substantial deterioration. In Topeka, we average 93 freeze-thaw days per winter season. All of the sealant in this structure is in a failed condition. The sealant has failed in loss of adhesion to the substrate, loss of cohesion, loss of elasticity and it is weathered. All result in moisture infiltration.

ii. Recommended improvements

1. To return this structure to a serviceable condition the deteriorated concrete should be repaired, and the structure should be waterproofed. The concrete should be repaired by removing all unsound concrete with 15 pound, maximum, chipping hammer in a manner that reinforcing steel is not damaged. Where 1/3 of reinforcing steel is exposed, the concrete shall be removed all around it 3/4" clear. Areas shall be prepared by cutting or chipping edge a minimum of 1/4" deep such that no feathered edges exist, adding reinforcing steel at engineer's direction, and sandblasting areas clean (reinforcing free of rust). Areas to be patched back with SikaQuick-1000 for 2" horizontal repair, Sikacrete-1000 for full depth horizontal repair and SikaQuick-VOH for vertical and overhead repair. Patching back with Shotcrete is also acceptable. Areas to be patched back with shotcrete shall be with Spec Mix Dry Process Shotcrete with minimum 7-day strength of 5000 psi and 28-day compressive strength of 6000 psi. Mix shall contain polyester fibers of random length. To protect the parking deck from future salt and moisture infiltration we recommend installing a waterproofing traffic membrane system. After the concrete has been repaired a new membrane should be applied. The parking deck shall be primed with Sikalastic Primer. A base coat of Sikalastic-720 Base shall be applied. The parking areas shall receive a topcoat of Sikalastic-745AL. The drive lanes shall receive an intermediate coat and topcoat of Sikalastic-745AL.The ramps from the 1st level to the 2nd level and to the basement shall receive Sikalastic 22 Lo-Mod Hybrid Traffic System with Black Beauty aggregate. The traffic coating system will be required to be provided with a five-year joint and several warranty. It is very important that this work, concrete repair and membrane application, be done by a contractor that specializes in this type of work, if not the work will have a short life span.

2. The exterior walls require repair and waterproofing to prevent further deterioration. The concrete should be repaired by method described above using SikaQuick-VOH patch material. All cracked brick and brick with spalled faces shall be removed and replaced with matching brick. All cracked and open mortar joints shall be properly prepared for repointing and repointed in 3 lifts of Type N mortar mix in color to match existing. All existing sealants shall be removed and replaced with Sikasil WS-295 sealant. Prepare substrate per manufactures recommendation. Use closed cell backer rod to control depth. The north wall shall be waterproofed by installing a new elastomeric coating. Wall shall be prepped as per manufactures recommendations and two coats of Sherwin Williams CF11W0051-Conflex XL Smooth elastomeric coating applied. The west wall of the north stair tower at the top the brick is in very poor condition with most of the brick having spalled faces. This occurs at the top 5'-6 of the wall. This area should be repaired by removing all loose faces of the brick and applying gunite to the surface. The area shall then be coated with elastomeric coating as described above. Just below this area is a concrete spandrel beam with a spalled face approximately 2'-6 x 3'-4. This spall poses as life safety hazard. This area should be barricaded a distance of 20'-0 minimum all around. It is very important that all of this work be done by a qualified professional waterproofer. This is specialty work and if not done properly the repairs will be short lived.

iii. Estimates of probable construction cost for recommended improvements

ITEM S1: Repair and replace all concrete and masonry items noted in structural assessment.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$2,500,000 - $2,700,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$250,000 - $270,000

ITEM S2: Additional concrete and masonry repair and replace to be expected ten years after repairs listed in Item 1.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$1,750,000 - $2,000,000 (costs do NOT include inflation beyond 2021)

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$175,000 - $200,000

ITEM S3: Additional concrete and masonry repair and replace to be expected ten years after repairs listed in Item 1.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$1,150,000 - $1,350,000 (costs do NOT include inflation beyond 2021)

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$115,000 - $135,000

c. Mechanical/Electrical/Plumbing
   i. Summary of existing conditions
      1. MECHANICAL SYSTEMS
         a. The office, waiting and toilet area on first floor is heated by a gas-fired furnace. Sheet metal ductwork distributes and returns air throughout these spaces. A wall thermostat located in the waiting area controls the furnace fan and gas valve to maintain the heating setpoint. The furnace flue runs vertically through the building inside a duct chase to the roof where it terminates above the roof level. No outside air is introduced to the space through the furnace. There is no exhaust out of the toilet area. The ignition source of the furnace appears to be higher than 18" above the floor as required by paragraph 406.2.9.1 of the 2018 IBC.
         b. The lower level of the parking garage is provided with an exhaust system. Branch exhaust ductwork is routed along the structure perimeter with another branch duct running north-south along the center of the lower level to the central main exhaust duct. The main exhaust duct runs vertically, up through the building to a

mechanical penthouse above the center stairway. A utility set type exhaust fan mounted in the penthouse exhausts air from the lower level and discharges the exhausted air to the outside through a vertical louver mounted in the penthouse wall. The existing exhaust fan was originally designed at 16,800 cfm. The system is currently not in operation.

c. The storage room on second floor level is served by a small PTAC, through-the-wall heating/cooling unit and a small, gas-fired furnace. The flue for this furnace terminates on the outside wall of the storage room, discharging into the parking garage area. The PTAC unit discharges the condenser air through the outside wall of the storage room into the parking garage. Maintenance staff indicates only the PTAC unit is needed to heat and cool the storage room.
d. A small electric unit heater is installed in the water service entrance room located on the lower level, below the east stairway. The heater serves to prevent the water lines from freezing up during cold weather conditions.

2. PLUMBING SYSTEMS

a. The facility has both a men's and women's restroom. The plumbing for these restrooms is original construction. The domestic water is copper pipe, and the sanitary waste and vent piping is cast iron pipe with the exception of a small portion at the water service entrance room that has been replaced with PVC pipe. Piping and fixtures are over 65 years old and well beyond the normal life expectancy.
b. Current fixture layout does not meet ADA requirements.
c. The domestic water service enters the building under the east stairway. The water meter is located inside this room. A portion of the domestic water service inside the room has heat trace cable installed on it.
d. A tank-type, gas-fired water heater serves to heat the domestic water for the toilet room lavatories. The water heater appears to be in adequate condition. The flue off the water heater runs up through roof level and appears to be in good condition.

e. The storm drain piping is steel piping for the horizontal runs and cast-iron piping for the vertical risers. Portions of the storm drain piping is showing visible signs of deterioration. The storm drain piping is also over 65 years old and well beyond the normal life expectancy.

3. ELECTRICAL SYSTEMS

a. There are 3 service feeds to the garage: a 120/240V, 1-Phase, 3-Wire service, a 240V, 3-Phase, 3-Wire service and a service that has been discontinued.
b. All the services are fed from the power company with overhead aerial cable at the northwest corner of the building.
c. The capacity of the services is adequate for the building electrical loads.
d. Two small load center panels were added to the original electrical service. These load centers are mounted on the exterior wall adjacent to the main service disconnects. Neither of the load centers are rated for damp location. These load centers are showing signs of rust and deterioration.
e. The 120V duplex power receptacles installed throughout the garage are “non-grounding” type.
f. The electrical circuits do not have a separate ground conductor installed in the conduits. These circuits attempt to utilize the conduit as the ground path. The lack of grounded receptacles and a grounded conductor in the wiring configuration creates a condition that may not protect persons using the receptacles from accidental electrical shock.
g. It was observed that some of the conduits installed on 5th floor have deterioration.
h. The original metal halide light fixtures in the parking areas of the garage have been modified. The original fixtures have been rewired to by-pass the ballast and fitted with new LED screw-in bulbs. The parking area lights are controlled by photo-electric cells which allow the lighting to be energized only when natural daylight cannot meet the lighting requirements. During our nighttime site investigation, it was observed that several of the lamps in the fixtures on each floor were burned out. Light level measurements taken during the

nighttime site investigation shows a range of between 5-60 footcandles based on where the meter was located (under or between fixtures. In areas where the light fixtures were not operating, the light levels measurements were 2-3 footcandles. The recommended minimum illumination is 2 footcandles with a minimum to maximum illumination ratio of 3:1 inside the parking facility. While the existing lighting systems meet the minimum illumination recommendations, the minimum to maximum ratio exceeds the 3:1 and reaches 30:1 in some instances. This wide range could make it more difficult for a driver's vision to adjust and adequately see pedestrians and create a dangerous environment for pedestrians.

i. The original fluorescent light fixtures in the office, waiting and toilet area on first floor remain.
j. The original incandescent light fixtures in the stairways have replacement lamps installed. The new lamps are LED. In addition to the normal powered lights, emergency lights have been added at each stair landing. These emergency lights are equipped with battery back-up power. Each stairway landing has an exit light provided. It appeared that some of these exit lights are provided with battery back-up power and others are only connected to the normal power source.
k. A Fire Alarm Control Panel (FACP) is provided and located in the Waiting Room on first level. A fire alarm horn/strobe unit is installed in the Waiting Room. Additionally, a ceiling mounted smoke detector is provided outside the elevator door on first level, also in the Waiting Room area. No other fire alarm devices were observed.
l. No emergency call system was observed at this facility.
m. No CCTV system was observed at this facility.
n. The gate control system is original, and maintenance has been minimal throughout the life of the system.

ii. Recommended improvements

1. MECHANICAL SYSTEMS

a. Enclosed Parking Garage Ventilation:

i. The lower level of the parking garage, by definition, is considered an enclosed parking garage and is required to have mechanical ventilation. The remaining levels of the garage are considered open parking garage and do not have requirements to be mechanically ventilated.
ii. The existing exhaust fan was designed to exhaust 16,800 cfm. Table 403.7 of the 2015 UMC requires continuous airflow of not less than 0.75 cfm per square foot of floor area served. Based on the area of the lower level of 22,400 square feet, the continuous airflow requirement is 16,800 cfm.
iii. Section 403.7.2 of the 2015 UMC allows the mechanical ventilation system to be operated intermittently provided the system is designed to automatically operate upon the detection of vehicle operation or the presence of occupants by an approved automatic detection device.
iv. The existing branch ductwork and exhaust grilles are properly sized for the required airflow and could be reused.
v. RECOMMENDATION: It is recommended that the existing exhaust fan be removed and replaced with a new fan. The existing fan is over 65 years which is well beyond its useful life as described in ASHRAE. A new exhaust fan can be designed to operate at the lower intermittent airflow for energy savings by providing carbon monoxide and nitrogen dioxide sensors which would signal the fan to increase its airflow to the maximum as required by code. The branch ductwork shall remain as it is sufficiently large enough to handle the required airflow. A new ventilation system will have a published expected useful life of 20 years but could operate effectively for a longer period with regular maintenance and repairs.

b. Office, Waiting and Toilet Area:
i. Table 402.1 of the 2015 UMC requires minimum outside air ventilation for the office and waiting areas. The minimum ventilation rate is calculated using 5 cfm per occupant of the space plus 0.06 cfm/sq ft of area of the space.

ii. Table 403.7 of the 2015 UMC requires public toilet rooms to be exhausted at 50 cfm for each water closet and urinal installed.

iii. RECOMMENDATION: The furnace serving the office, waiting and toilet area shall be replaced with a new furnace unit. Outside air shall be introduced to the space to meet Table 402.1. The new furnace shall be sized to accommodate the outside air as well as the space loads. It is also recommended that an exhaust fan be provided to exhaust the toilet rooms to meet the exhaust rates of Table 403.7.

2. **PLUMBING SYSTEMS**
   a. Enclosed Parking Garage:
      i. RECOMMENDATION: The portions of storm drain piping that is showing signs of deterioration shall be replaced with new piping to match existing.
   b. Office, Waiting and Toiler Area:
      ii. RECOMMENDATION: New ADA plumbing fixtures shall be provided and installed as per the new ADA toilet area layout. The existing domestic water and sanitary sewer lines shall be extended to new fixture connections. A new point of use, electric water heaters shall be provided for the toilet lavatories and the existing gas-fired water heater removed. The usage of the toilet facility is very limited and maintaining the water in the tank at the required hot water temperature is less efficient than the point of use heaters that will only heat the water when used.

3. **ELECTRICAL SYSTEMS**
   a. Enclosed Parking Garage:
      i. The existing load centers that have been added do not meet code requirements for installation in wet location as per definition and Section 312.2 of the 2020 NEC. The location where these panels are installed is subject to rainwater exposure.
      ii. Portions of the existing electrical system are exhibiting deterioration.
      iii. The duplex receptacles are non-grounding type.

iv. None of the electrical circuits are provided with a ground wire and utilize the conduit as the ground path. If the conduit is broken, a coupling comes loose or other situations that breaks the ground path back to the panel occurs, a potential electrical shock hazard to the building users is created.

v. The existing parking garage light fixture have been altered from the original wiring. The revision has allowed a more energy efficient light source to be utilized, however the new lamp source does not have the life expectancy of a new LED fixture with proper LED lights and driver. Replacement of these fixtures with new LED light fixtures, designed for use in parking garages, (better photometrics and light distribution) will provide a properly illuminated facility and an even more energy efficient system.

vi. The original, normal power light fixtures shall be replaced with new LED light fixture with integral battery back-up power and with the ability to be tested (fixtures are required to be tested periodically by code). The existing emergency light fixtures shall be removed as well. New emergency light fixtures shall be provided as required to meet code to allow occupants to safely find their way out of the parking structure. New exit lights shall be provided and shall include battery back-up power and ability to be tested (fixtures are required to be tested periodically by code).

vii. The fire alarm system requires additional devices to be added, including smoke detectors at each floor outside the elevator door and elevator recall.

viii. The gate control system needs repairs. Many of the elements of the system are out of date.

ix. RECOMMENDATION: The existing load centers shall be replaced with new panels rated for the environment in which they are installed. Deteriorating conduit shall be replaced with new to match. Existing non-grounding duplex receptacles shall be replaced with new grounded duplex receptacles and ground wires installed in

existing conduit. All obsolete electrical equipment shall be removed. New light fixtures shall be provided designed to provide proper illumination levels and an energy efficient installation. The fire alarm system be upgraded to include smoke detectors at each floor that the elevator serves and recall operation of elevator. Provide an emergency call system with call stations at stair entrances on each floor level. Provide a closed-circuit television (CCTV) system throughout the garage to include low light level cameras rated for industrial installations. The gate control system should be upgraded to include new barrier gate arms, coiling door, door motor and detector loop.

b. Office, Waiting and Toilet Area:

i. RECOMMENDATIONS: Provide GFI duplex, grounded receptacles in the toilet rooms. Replace original fluorescent light fixture with energy efficient LED fixtures.

iii. Estimates of probable construction cost for recommended improvements

1. MECHANICAL SYSTEMS

ITEM MEP1: Provide new exhaust fan and add carbon dioxide and nitrogen dioxide detectors to allow the exhaust fan to be operated at a reduced airflow in safe conditions.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$30,000 - $40,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$3,600 - $4,800

ITEM MEP2: Provide new furnace sized for code required outside air to create positive pressure relationship with garage.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$25,000 - $35,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$3,000 - $3,600

ITEM MEP3: Provide new exhaust fan for Toilet Rooms sized to meet current codes.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$3,000 - $4,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$1,000 - $2,000

2. PLUMBING SYSTEMS

ITEM MEP4: Repair the portions of storm drain piping that has deteriorated with new to match existing.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$4,000 - $6,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$700 - $1,000

ITEM MEP5: Provide new ADA compliant plumbing fixtures and domestic water, waste and vent piping for the new fixtures. Provide new point of use electric water heaters at lavatories.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$85,000 - $100,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$10,200 - $12,000

3. ELECTRICAL SYSTEMS

ITEM MEP6: Provide new panelboard rated for installation in wet location with sufficient circuit breaker space to replace the two load centers.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$5,000 - $6,500

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$1,500 - $2,500

ITEM MEP7: Replace existing conduit showing signs of deterioration with new to match existing.

ESTIMATE OF PROBABLE CONSTRUCTION COST

$5,000 - $7,500

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$1,500 - $2,500

ITEM MEP8: Provide new grounded duplex, GFI receptacles and new phase and ground conductors throughout the parking garage as well as the toilet rooms.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$50,000 - $60,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$6,000 - $7,200

ITEM MEP9: Remove obsolete electrical equipment and service.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$2,500 - $3,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$1,000 - $1,500

ITEM MEP10: Provide new LED light fixtures in both Parking Garage and Office, waiting and Toilet area.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$100,000 - $130,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$12,000 - $16,000

ITEM MEP11: Upgrade the existing fire alarm system to include smoke detectors on each level served by the elevator and add elevator recall.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$8,000 - $12,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$1,000 - $1,500

ITEM MEP12: Provide a new Emergency Call system at each stair entrance on each level.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$18,000 - $24,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$2,200 - $3,000

ITEM MEP13: Provide a new CCTV throughout the parking garage.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$35,000 - $40,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$4,200 - $4,800

ITEM MEP14: Provide upgrades to existing gate control system.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$33,000 - $40,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$4,000 - $5,000

d. Fire Protection Sprinkler
    i. Summary of existing conditions

1. The parking garage appears to qualify as an open parking garage per IBC definitions. As such, the majority of the garage is not provided with sprinkler protection, with the exception of the below-grade basement level which is sprinklered (IBC 406.5 & 406.6.3). The sprinkler system is supplied by a 6" underground fire service into a valve closet on the basement level off of Stair 1. The incoming service is provided with an OS&Y shutoff valve, which was closed, and greatly corroded. The OS&Y did not appear to be monitored via tamper switch, nor was it chained, as required by NFPA 13 (8.16.1.1.2.1). No backflow preventer was observed. Unless a backflow preventer exists in a vault outside the building, the system would not meet the standards for backflow prevention and cross contamination to the local water utility. A (2) x 2-1/2" fire department connection on the east side of the building ties into the service with a check valve. The hose valve inlet caps were missing, allowing for the accumulation of debris, insects, or trash.

2. A single 6" sprinkler dry alarm valve is provided in the closet, with dry trim and air maintenance device. The valve was also greatly corroded. As the OS&Y valve was closed, the system was inactive, with water gauges reading 0 psi. The air supply gauges also read 0 psi. The last known annual sprinkler

inspection was performed on 6/14/2005 by Jayhawk Fire Sprinkler Co., Inc., per the inspection tags present. The system has not been sufficiently maintained in accordance with NFPA 25. The dry valve closet is provided with a unit heater as required by NFPA 13, but the room was not provided with required lighting (7.2.5.2.1). It is unclear if the heater was operational. The system was supplied with supervisory air from an air compressor located in a Storage room on the first floor, near Stair 2. At one time, a sprinkler alarm bell was present outside of a first-floor office (NFPA 13, 6.9.3.1), however the bell appears to have been removed at some point, as only the backbox and identification plate remains.

3. A spare sprinkler cabinet was provided, with three sprinkler heads and one wrench inside. This does not comply with NFPA 13 (6.2.9), which requires a minimum of 6 spare sprinklers. Sprinklers present were old-style, fusible link Reliable Automatic Sprinkler Company sprinklers.

4. Sprinklers were present on the basement level and were old-style fusible link. Sprinklers at lower elevations were provided with sprinkler head guards. Piping appeared to be mostly galvanized, and almost all pipe showed some corrosion, with portions significantly corroded. Piping was provided with low point drum drip drains where pipe was required to drop. Some sections of pipe were broken or damaged.

5. Two manual dry vertical standpipes were provided, one adjacent to the elevator, and another in the northeast corner. These might meet locations required by IBC for a Class I standpipe system (905.3.1 Item 3), with hose valves for open parking garages subject to freezing located for Class II standpipes and are not required to be within exit stairs. Hose valves were 2-1/2”, rated for 175 psi. Some hose valve caps were missing, allowing for the accumulation of debris, insects, or trash. Hose valve locations are insufficient to cover the entire garage however, as IBC requires all points to be within 130 feet of a hose valve for Class II hose valve locations (905.5). There are portions of the garage which exceed this maximum distance for hose lay. The standpipes appear interconnected, as required by IBC (905.4.2). It was unclear if a standpipe isolation valve was provided for each standpipe as required by NFPA 14 (6.3.2).

6. While standpipes located within the interior office portion were painted, exterior portions were galvanized, and showing corrosion. The piping was not corroded to the extent of sprinkler pipe but showed some wear all the same.

7. The standpipes were served by a (2) x 2-1/2" fire department connection adjacent to the sprinkler FDC. The hose valve inlet caps were missing, similar to the sprinkler FDC. The standpipe FDC exceeds 100 feet to a fire hydrant, as required by NFPA 14 (6.4.5.4). The FDC is not sufficient to serve two standpipes, as NFPA 14 requires three inlets, instead of two, to provide the required 750 gpm of design flow (7.10.1.1.1 & 7.10.1.1.3), with 250 gpm through each inlet (7.12.3).

ii. Recommended improvements

1. Both the sprinkler and standpipe systems were not maintained in accordance with NFPA 25 and showed significant signs of corrosion. Both systems should be replaced in their entirety. As the underground pipe was not able to be visually inspected, it is recommended that the demolition go all the way back to the city water main. A new dry sprinkler system should be provided for the basement level, complete with city-approved backflow prevention device, shutoff valve and dry alarm valve and required trim. Based on more recent research, it is recommended that the dry system piping be black steel pipe, filled with nitrogen from a nitrogen generator, in lieu of compressed air. Nitrogen has proven far more effective at preventing corrosion over time than air which introduces oxygen that corrodes the pipe at a faster rate. The sprinkler system shall be designed and installed in accordance with NFPA 13. A properly maintained sprinkler piping system will have an expected useful life of 20-30 years but can effectively serve its purpose longer with the proper periodic inspections and maintenance.

2. A new Class I manual dry standpipe system should be provided, with hose valves at required for Class II standpipes. New hose valves should be placed such that all portions of the garage are within 130 feet of a 2-1/2" standpipe hose valve. A new fire department connection should be provided with the required number of inlets as per NFPA 14 and located within 100 feet of a fire hydrant. The standpipe system shall be designed and installed in accordance with NFPA 14. A properly maintained standpipe system will have an expected

useful life of 20-30 years but can effectively serve its purpose longer with the proper periodic inspections and maintenance.

3. The Owner should continue to have the systems inspected and maintained as described within NFPA 25.

iii. Estimates of probable construction cost for recommended improvements

ITEM FPS1: Provide new dry sprinkler system, including service entrance.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$120,000 - $140,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$15,000 - $17,000

ITEM FPS2: Provide new standpipe system.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$55,000 - $75,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$7,000 - $9,000

Alternative 2:
Addition to Existing Parking Garage

Assessment of the existing facility's capacity to support additional levels to the existing structure

a. Architectural
    i. Not applicable since the existing structural systems cannot support such an addition.
b. Structural
    i. A structural analysis was preformed to determine if the existing structure would support the addition of 100 new parking spaces. Each existing level contains approximately 56 parking spaces so two additional levels would be required. The additional levels would be constructed like and kind of the existing structure with cast-in-place concrete slabs, joist, beams and columns. Our structural analysis indicates that the existing columns would be overstressed in compression and that the allowable soil bearing capacity would be exceeded. It is our recommendation that this structure not be added on to.
c. MEP
    i. Not applicable since the existing structural systems cannot support such an addition.
d. Fire Protection Sprinkler
    i. Not applicable since the existing structural systems cannot support such an addition.

Alternative 3:
New Parking Garage

New parking garage

a. Demolition of existing parking garage and construction of new 400 space parking garage located on the existing site and potentially including adjacent parking lot immediately north of the existing facility
    i. Estimate of probable construction cost for new parking garage facility.
        1. **NEW FACILITY CONSTRUCTION**

ITEM 1: Demolish existing parking garage facility.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$2,000,000 - $2,500,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$150,000 - $180,000

ITEM 2: Construction new 400 space parking garage facility.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$17,000,000 - $19,000,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$1,700,000 - $1,900,000

b. Demolition of existing parking garage and construction of new 300-320 space parking garage located on the existing site and potentially including adjacent parking lot immediately north of the existing facility
    i. Estimate of probable construction cost for new parking garage facility.
        1. **NEW FACILITY CONSTRUCTION**

ITEM 3: Construction new 300-320 space parking garage facility.

ESTIMATE OF PROBABLE CONSTRUCTION COST
$14,000,000 - $16,000,000

ESTIMATE OF ENGINEER/ARCHITECT DESIGN FEE
$1,400,000 - $1,600,000

Conclusion and Summary

Conclusion/Summary

The existing Uptowner Parking Garage is over 60 years old and shows its age. While some maintenance has been provided over the years, it has not been to a level to avoid the need for major repairs and upgrades. In addition to the natural aging and wear on the facility, the building and safety codes have changed over the lifetime of the facility. Any major construction on the facility could trigger the city building code enforcement to demand upgrades in the life safety and ADA accessibility accommodations.

The most significant repair required of the facility includes the repair and replacement of the existing concrete structure for the facility. There are significant areas of concrete repairs and waterproofing required of the facility to address areas of spalling concrete and masonry, and corrosion of reinforcement steel in the concrete structure. The cost of the initial recommended scope of repairs is $2,700,000. These repairs can be completed in phases, but everyone must be aware that the corrosion will continue and increase the amount of repair work required with every year the work is postponed. The maintenance and repairs of this type of facility cannot be eliminated. It is recommended that the facility be inspected a maximum of every 10 years. It can be expected that there will be additional maintenance and repairs to require attention at that time, at an estimated cost of $2,000,000 (10 years) and $1,350,000 (20 years).

There are several life safety items which need to be addressed. These include an operational fire protection sprinkler system in the basement of the facility, standpipes, an operating ventilation system in the basement to avoid carbon monoxide collection, a fire alarm system and miscellaneous electrical safety improvements. The estimate of probable construction cost for these items is approximately $360,000.

Additional items which require attention include restroom ADA upgrades, doors and hardware, ADA signage, miscellaneous HVAC equipment replacement, storm drain piping repairs, improvement lighting systems, CCTV systems and upgraded entry systems. The estimate of probable construction cost for these items is approximately $600,000.

The estimate of probable construction cost for all the recommended repairs and improvements is approximately $3,500,000. Professional design services associated with these improvements is estimated to be approximately $400,000. A detailed summary of the recommendations and associated costs are included in Table 1. Without addressing the structural deficiencies and the life safety items, this facility could be considered a significant safety concern for those using the facility. These items should be addressed immediately.

Table 1: Summary of Alternate 1 Recommendations

Recommendation	Estimate of Probable Construction Cost for Current Conditions	Estimate of Probable Construction Cost for 10-year Conditions	Estimate of Probable Construction Cost for 20-year Conditions	Estimated Design Fee
A1 – ADA toilet area remodel	$200,000			$25,000
A2 – New doors & hardware	$40,000			$6,500
A3 – ADA signage	$30,000			$4,000
S1 – Repair & replace concrete	$2,700,000			$270,000
S2 – Repair & replace concrete (10 years)		$2,000,000		$200,000 (not incl. in fee total)
S3 – Repair & replace concrete (20 years)			$1,350,000	$135,000 (not incl. in fee total)
MEP1 – New exhaust fan	$40,000			$4,000
MEP2 – New furnace for toilet area	$35,000			$3,600
MEP3 – New exhaust fan for toilets	$4,000			$2,000
MEP4 – New storm drain piping	$6,000			$1,000
MEP5 – New ADA plumbing fixtures & piping	$100,000			$12,000
MEP6 – New wet location panelboard	$6,500			$2,500
MEP7 – Replace existing conduits	$7,500			$2,500
MEP8 – New receptacles & conductors	$60,000			$7,200
MEP9 – Remove obsolete electrical equipment	$3,000			$1,500

Table 1: Summary of Alternate 1 Recommendations (continued)

MEP10 – New LED lighting fixtures	$130,000			$16,000
MEP11 – New fire alarm system	$12,000			$1,500
MEP12 – New emergency call system	$24,000			$3,000
MEP13 – New CCTV system	$40,000			$4,800
MEP14 – Upgrade gate entry system	$40,000			$5,000
FPS1 – New sprinkler system	$140,000			$17,000
FPS2 – New standpipe system	$75,000			$9,000
Total Improvements	$3,693,000	$2,000,000	$1,350,000	$398,100

Due to a potential need for increased quantity of parking spaces in this location, an investigation was performed to determine if the existing parking garage could be expanded by adding more levels to the top of the existing facility. The structural capabilities of the existing structure were analyzed based upon the original 1955 construction documents; the analysis determined that the existing structure would not support any vertical additions. This sort of expansion is not available as an option.

The third alternate considered is the demolition of the existing parking garage facility (300-320 spaces) and the construction of a new 400 space parking garage. The new parking garage requires the existing facility to be removed, and a new facility to be constructed within the footprint of the existing parking garage or extended some distance to the north. The estimate of probable construction cost for the demolition and the new construction is approximately $21,500,000, with an estimate of approximately $2,000,000 for the professional design services associated with each of these items. Table 2 summarizes these cost details.

Table 2: Summary of Alternate 3

	Estimate of Probable Construction Cost	Estimated Design Fee
1 – Existing parking garage demolition	$2,500,000	$180,000
2 – New 400 space parking garage construction	$19,000,000	$1,900,000
3 – New 300-320 space parking garage construction	$16,000,000	$1,600,000
Total (400 space garage)	$21,500,000	$2,080,000
Total (300-320 space garage)	$18,500,000	$1,780,000

Comparing the estimated costs ($3,500,000) for repairs and improvements of the existing Uptowner parking garage to the estimated costs ($21,500,000) for a new parking garage structure, the repairs are less than 20% of the costs of a new structure. Even if the future (10-year and 20-year) maintenance estimates are factored in, the repairs are approximately 30% of the cost of a new structure. However, this comparison does not consider any 10 or 20-year maintenance on the new structure, nor is there any consideration for inflation in costs over the 10 or 20-year time period.

The existing parking garage requires extensive repairs and improvements and will require continued maintenance attention. While a new facility does not eliminate maintenance and repairs costs, the new structure would certainly reduce the magnitude of the annual costs for maintenance and repairs.

The decision by the City, and any private partners, as to whether the existing parking garage should be repaired or demolished and replaced with a new parking garage is both a financial decision, as well as a determination as to the number of parking spaces the City needs at this location. If 400 parking spaces are required, the existing facility cannot satisfy this requirement, and a new parking garage can be constructed to meet this need. If available funds are limited and a parking garage is still necessary at this location, the structural and safety repairs must be completed and some of the other upgrades can be addressed in phases as funds allow.

Appendix A

Uptowner Parking Garage Assessment for Parrish – July 23, 2020

Bartlett & West
544 Columbia Drive
Lawrence, KS 66049
ph (785) 749-9452
www.bartwest.com

July 23, 2020

Mr. James Parrish
Parrish Hotels
700 SW Jackson Street, Suite 200
Topeka, Kansas 66603

RE: Uptowner Parking Garage
SW 7th Street & SW Jackson Street
Topeka, Kansas
Project No. 20290.000

Dear Mr. Parrish:

At your request, Bartlett & West has performed visual observations and has sounded the parking deck of the Uptowner Parking Garage located at the corner of SW 7th Street and SW Jackson Street in Topeka, Kansas. The purpose of the study was to observe distress in the structure and determine possible causes of distress such that recommendations for repair could be made.

Site visits were made on June 2, 3, 5, 8 and 19, 2020. Our observations were limited to areas of accessibility. Our study is based on our visual observations, conversation with you, Mr. Steve Johnson and Mr. Shaun Harris, and our knowledge and experience with structures of this type of construction, age, and condition. A complete set of original construction documents were available for review. Also available for review were construction documents for a repair and renovation project.

The structure was constructed from construction documents prepared by Griest & Ekdahl and dated 1955. The structure contains nine parking levels plus a basement. This structure is concrete framed with joist/slab, beams and columns. The partial height first level walls on the east and south elevation are clad with brick as are the elevator and stair towers. The north elevation is infilled with concrete masonry units. The basement floor is concrete slab on grade and the structure is founded on concrete spread footings. Construction documents for the Repair and Renovation of the Uptowner Parking Garage were prepared by Ekdahl, Davis, Depew, Persson / Architects and dated 1981 with a revision date of 1982. This work was concrete and masonry repair, and the installation of a waterproof membrane system.

All nine levels of the parking garage were sounded by chain dragging to determine areas of deterioration and delaminated concrete. Areas of deterioration and delamination were marked with fluorescent paint and quantities measured such that an opinion of probable cost could be prepared. Deteriorated concrete was also observed on the joist and beam soffits, concrete walls, and concrete columns. Observations of the exterior of the structure were also made.

Results from sounding the parking decks indicated that approximately 9,150 s.f. of deteriorated or delaminated concrete is present (fig 1). This represents about 9% of the parking surface. The levels showing the most deterioration were 7, 8, and 9. Approximately 410 s.f. of column (fig. 2) and wall (fig. 3) deterioration was noted. Overhead concrete deterioration of beam and joist soffits (fig. 4) was estimated at 400 s.f. On the 2/3 level original guardrails on top of the perimeter walls were removed such that a full height fence could be installed. The existing post were cut off flush with the top of the wall. The concrete in these areas is deteriorating (fig. 5).

The waterproof membrane installed in the 1982 repair project was not maintained and is worn out. Deterioration was also noted on the exterior of the structure. The first level wall and the stair and elevator tower are clad with brick. These walls contain cracked brick (fig. 6), open mortar joints (fig. 7) and spalled brick faces (fig. 8). Random area of spalled concrete was noted with the area shown in figure 9 being the worst. Sealant at masonry/concrete intersections, around door and window openings and around mechanical openings is all in failed condition (fig. 10). The doors on the north and central stair towers were found in poor condition (fig. 11). The north exterior wall has concrete spandrel beams with concrete masonry unit (CMU) infill. This wall has been coated in the past with an elastomeric coating which is now deteriorating.

All of the noted deterioration is in some form related to moisture infiltration. When moisture reaches reinforcing steel, it corrodes. The products of corrosion occupy up to six times the original volume of the steel. The forces from the expansion of the rust products cause the concrete to crack and spall off. With the presence of salt this process is accelerated. When moisture enters a building material through an open mortar joint or a crack, it becomes trapped. Trapped moisture will eventually freeze. Moisture expands as it freezes. Confined pressure from freezing water can reach nearly 15,000 psi. This causes cracks to get longer and wider, mortar joint to pop out and brick faces to spall. Repeated freeze-thaw cycles will eventually lead to substantial deterioration. In Topeka, we average 93 freeze-thaw days per winter season. All of the sealant in this structure is in a failed condition. The sealant has failed in loss of adhesion to the substrate, loss cohesion, loss elasticity and it is weathered. All result in moisture infiltration.

fig. 1

fig. 2

fig. 3

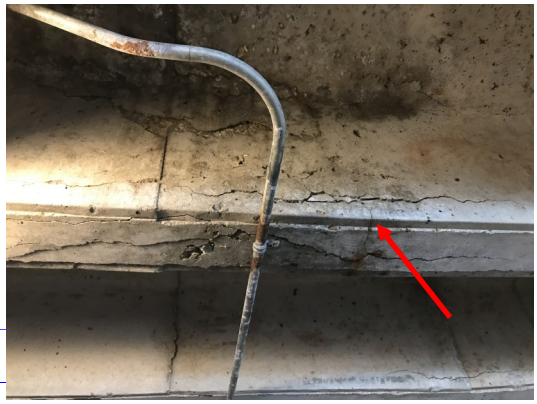


fig. 4

fig. 5

fig. 6

fig. 7

fig. 8

fig. 9

fig. 10

fig. 11

To return this structure to a serviceable condition the deteriorated concrete should be repaired, and the structure should be waterproofed. The concrete should be repaired by removing all unsound concrete with 15 pound, maximum, chipping hammer in a manner that reinforcing steel is not damaged. Where 1/3 of reinforcing steel is exposed the concrete shall be removed all around it 3/4" clear. Areas shall be prepared by cutting or chipping edge a minimum of 1/4" deep such that no feathered edges exist, adding reinforcing steel at engineer's direction, and sandblasting areas clean (reinforcing free of rust). Areas to be patched back with SikaQuick-1000 for 2" horizontal repair, Sikacrete-1000 for full depth horizontal repair and SikaQuick-VOH for vertical and overhead repair. Patching back with Shotcrete is also acceptable. Areas to be patched back with shotcrete shall be with Spec Mix Dry Process Shotcrete with minimum 7 day strength of 5000 psi and 28 day compressive strength of 6000 psi. Mix shall contain polyester fibers of random length. To protect the parking deck from future salt and moisture infiltration we recommend installing a waterproofing traffic membrane system. After the concrete has been repaired a new membrane should be applied. The parking deck shall be primed with Sikalastic Primer. A base coat of Sikalastic-720 Base shall be applied. The parking areas shall receive a topcoat of Sikalastic-745AL. The drive lanes shall receive an intermediate coat and top coat of Sikalastic-745AL.The ramps from the 1st level to the 2nd level and to the basement shall receive Sikalastic 22 Lo-Mod Hybrid Traffic System with Black Beauty aggregate. The traffic coating system will be required to be provided with a five year joint and several warranty. It is very important that this work, concrete repair and membrane application, be done by a contractor that specializes in this type of work, if not the work will have a short life span.

The exterior walls require repair and waterproofing to prevent further deterioration. The concrete should be repaired by method described above using SikaQuick-VOH patch material. All cracked brick and brick with spalled faces shall be removed and replaced with matching brick. All cracked and open mortar joints shall be properly prepared for repointing and repointed in 3 lifts of Type N mortar mix in color to match existing. All existing sealant shall be removed and replaced with Sikasil WS-295 sealant. Prepare substrate per manufactures recommendation. Use closed cell backer rod to control depth. The north wall shall be water-proofed by installing new elastomeric coating. Wall shall be prepped as per manufactures recommendations and two coats of Sherwin Williams CF11W0051-Conflex XL Smooth elastomeric coating applied. The west wall of the north stair tower at the top the brick is in very poor condition with most of the brick having spalled faces. This occurs at the top 5'-6 of the wall. This area should be repaired by removing all loose faces of the brick and applying gunite to the surface. The area shall then be coated with elastomeric coating as described above. The source of moisture infiltration from the top of the wall has been eliminated with a recent installation of a new roof. Just below this area is a concrete spandrel beam with a spalled face approximately 2'-6 x 3'-4 as shown figure 9. This spall poses as life safety hazard. This area should be barricaded a distance of 20'-0 minimum all around. It is very important that all of this

work be done by a qualified professional waterproofer. This is specialty work and if not done properly the repairs will be short lived.

A breakdown of our opinion of probable cost for this repair project is as follows:

For budget purposes the construction is broken down into three phase. Phase 1 is the repair and restoration of levels 8 and 9. Phase 2 is the repair and restoration of levels 5, 6 and 7 and the waterproofing of the exterior walls. Phase 3 is the repair and restoration of the basement, levels 1, 2, 3 and 4. Budget items for this work include

- Mobilization, general conditions and permit
- Full depth/Partial depth concrete restoration
- Vertical wall, column, and beam concrete restoration
- Joist concrete restoration
- Shoring allowance
- Reinforcing steel allowance
- Traffic coating
- Traffic striping
- Paint perimeter rails
- Replace door and frames
- Drain allowance
- Pipe sleeve concrete patching
- Concrete repair exterior walls
- Brick replacement exterior walls
- Repoint exterior walls
- Gunite exterior walls
- Elastomeric coating exterior walls
- Sealant replacement exterior walls
- Construction allowance
- Kansas Remodel Tax
- Consulting fee for preparation of construction documents and construction administration services

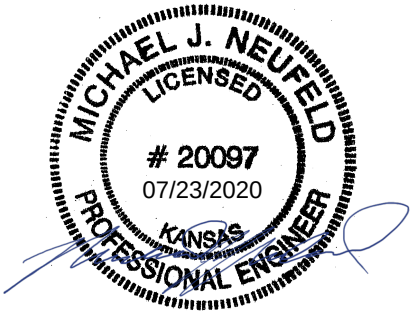
Phase 1:	$601,000.00
Phase 2:	$685,000.00
Phase 3:	$897,000.00
Consulting Fee:	$218,000.00
Total:	$2,401,000.00

These costs are intended for budget purposes only. Actual cost would be determined when it is decided to proceed with work.

With these repairs and waterproofing completed and a good maintenance plan initiated, this structure should provide many more years of satisfactory service.

We would like to thank you, Mr. Shaun Harris and Mr. Steve Johnson for all your help in expediting our study. Please do not hesitate to contact us if you have any questions or if we can be of further service to you on this matter.

Respectfully submitted,
BARTLETT & WEST, INC.



Shawn McGarity
Lead Project Engineer

Michael Neufeld
Project Manager

Cc: Mr. Steve Johnson

Appendix B

Uptowner Parking Garage Assessment Photos – November 2, 2021

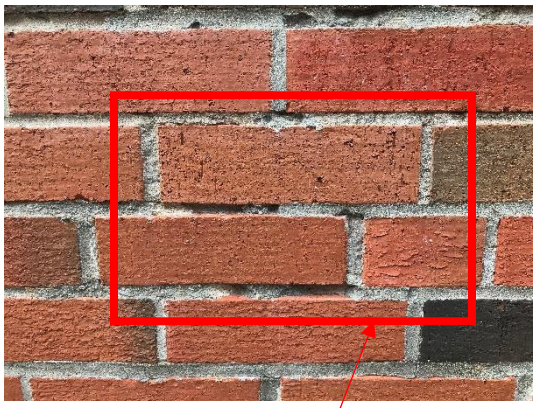
Deteriorating concrete and reinforcing steel joint stem

Spalled face of concrete wall

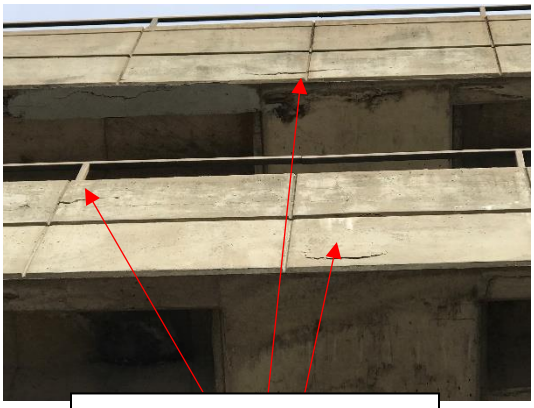
Debris on floor falling deteriorated concrete area above

Spalled concrete slab

Failed sealant



Open mortar joints require repointing



Spalled face of concrete spandrel beam

Area of spalled brick faces

Spalled face of concrete spandrel beam. Spall should be removed for safety concerns

Spalled face of concrete spandrel beam

Moisture stains on the inside face of wall of failed elastomeric coating