Kauffman Stadium Assessment | 2014

JCSCA + Burns & McDonnell

This document contains information pertaining to the condition of Kauffman Stadium as documented by the Jackson County Sports Complex Authority, including descriptions, conditions, and exhibits which have been verified by Burns & McDonnell.

Jackson County Sports Complex Authority

JACKSON COUNTY Sports Complex Authority

2/14/2014

Burns & McDonnell SINCE 1898

Report Outline

Table of Contents

I. Purpose and Scope

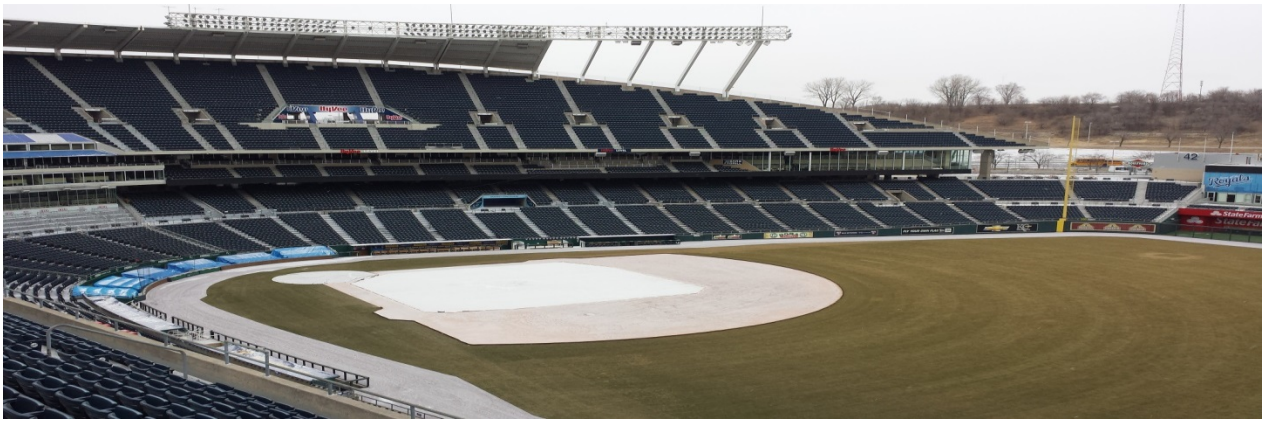
A. Purpose

The Kansas City Royals organization has a lease with the Jackson County Sports Complex Authority (JCSCA) that requires the organization to maintain Kauffman stadium to a level consistent with a First Class MLB Baseball Stadium. The purpose of this study is to report the overall condition of Kauffman Stadium and its immediate environs to determine if the team is upholding their lease agreement.

B. Scope

Burns & McDonnell, in conjunction with the JCSCA, has developed a Facility Assessment Report that reviews and documents the stadium condition. The Jackson county Sports Complex Authority conducted an inspection of every room in Kauffman Stadium. Over the course of 2013, each room was carefully examined and documented using iPad technology. The Fuze Inspections mobile application by Evoco Inc. was utilized for the walkthrough. This application allowed the Jackson County Sports Complex Authority to build a database containing photos, condition ratings, and an inventory of building elements in each room. These elements included: a rating of overall room, electrical components, mechanical components, and various pieces of equipment, as well as, a listing of the type of floors, walls, and ceilings in each room. Checks of mechanical and plumbing equipment, as well as, life safety systems, such as 24 hour monitored control rooms and fire suppression systems were also completed. Burns & McDonnell reviewed the database, interviewed Kansas City Royals staff and received maintenance records. This report is based on the above review in conjunction with on-site evaluations by Burns & McDonnell engineers and architects.

Burns & McDonnell's scope is limited in nature and does not include an entire facility room-by-room inspection or evaluation. An on-site walk through of the stadium and its immediate environs was performed by Burns & McDonnell's engineers and architects to spot-check rooms and areas to ensure that the overall conditions reported in the Jackson County Sports Complex Authority's condition reports align with the actual conditions as observed. Additionally, Burns & McDonnell has provided recommendations for observed maintenance issues that may need to be rectified in the near future.



II. Executive Summary

A. General Description

Kauffman Stadium, located at One Royal Way in Kansas City, Missouri, is intended to enhance the fan game day experience, increase revenue generation, and improve the day to day operations of the Kansas City Royals and its other users. The stadium holds approximately 38,000 fans and offers amenities such as an outfield concourse, kids area, bars, restaurants, hall of fame/conference center, and various other spaces geared towards large scale entertainment.

B. General Condition

In general, Kauffman Stadium and its immediate environs appear to be in exceptional condition. It is apparent that the Kansas City Royals have performed the ordinary cleaning and maintenance obligations consistent with a First Class MLB Baseball Stadium.

Minor physical deficiencies were observed throughout various locations within Kauffman Stadium and its immediate environs. Such deficiencies are expected in such a large facility and typical of a high-use facility. Most deficiencies can be easily addressed by the Kansas City Royals through standard maintenance procedures.

C. Recommendations

Section III – Description and Condition includes recommendations for the deficiencies observed for each building or site category. The majority of the observed deficiencies are generally minor and may require attention in the near future. A summary of recommendations may be found in Section IV (pages 21-22).

III. Description and Condition

A. Site

1. Flatwork

Description:

- General
  - Due to the recent renovations to the stadium, the site infrastructure in general is in very good condition with minor defects observed.
- Kauffman contains numerous concrete retaining walls and stairs between the curb cut and the stadium concourse.
- Concrete walkways are abundant surrounding the stadium.

Observation/Comments:

- Retaining Walls and Stairs
  - No significant deterioration was observed with exception of minor hair line cracking at some locations.
- Concrete Walkways
  - Minor cracking was observed throughout the facility on walkways and concourses. Routine maintenance with sealant should be performed in the near future. Refer to Flatwork Images: Exhibit A1.1 (right).
  - Excessive cracking was found near the east entry gate at the edge of the polished surface with the concourse and exterior walkway. Refer to Flatwork Images: Exhibit A1.2 and A1.3 (right). This area should be repaired prior to the beginning of the 2014 season.

2. Landscaping and Appurtenances

Description:

- Various species of native planting and grass can be found between walkways and within planting beds surrounding the stadium.

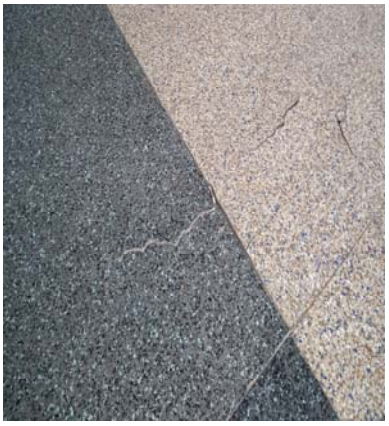
Observation/Comments:

Flatwork Images:

Exhibit A1.1

Exhibit A1.2

Exhibit A1.3



- All landscaping observed was in a dormant stage at the time of observation, but appears to be well maintained and in good condition. Refer to Landscape Images: Exhibit A2.1 (right).

B. Frame and Envelope

1. Substructure

Description:

- Primarily reinforced concrete drilled piers with pier caps.
- Grade beams around perimeter and throughout foundation system.
- Single spread footings partially throughout foundation system.
- Mat foundations support stair and elevator core walls.
- Floating slab-on-grade.

Observation/Comments:

- No significant settlement of the structure was observed.
- The slab-on-grade is in excellent condition. No major cracks or spalling was observed. The slab surface is flat and smooth.
- Control joints and expansion joints are in excellent condition.

2. Superstructure

Description:

- The original superstructure is primarily reinforced concrete columns and walls with reinforced concrete pan joist slab system. See the following bullet points for a description of the additions constructed during the major renovations stage.
- The vertical support system is primarily a mixture of reinforced concrete walls and steel wide flange columns.
- Plaza level consists of a suspended reinforced concrete slab/beam system. Other framing systems include a light weight slab-on-foam fill

Landscape Images:

Exhibit A2.1

Superstructure Images:

Exhibit B2.1

bearing on suspended concrete slab and composite deck supported by steel wide flange beams.

- Broadcast level primarily consists of light weight composite deck supported by steel wide flange beams.
- Outfield Roof level primarily consists of steel wide flange and Hollow Structural Section (HSS) beams supporting standing seam metal roof deck. This level also consists of metal roof deck supported by steel wide flange beams.
- Loge level primarily consists of composite deck supported by composite steel wide flange beams. This level also consists of light weight slab-on-foam fill bearing on suspended concrete slab.
- Writing Press level primarily consists of cold form metal joists supporting steel deck. This level also consists of light weight composite deck supported by steel wide flange beams.
- View level primarily consists of light weight composite deck supported by steel wide flange beams.
- Roof level consists of steel roof deck supported by steel wide flange beams.
- The Scoreboard consists of a mixture of steel wide flange beams, Hollow Structural Sections (HSS) tubes and steel angles. The floor system is metal grating.
- The lateral support system is a mixture of ordinary braced frames and reinforced concrete shear walls.

Observation/Comments:

- The original reinforced concrete columns and walls are in excellent condition. No major cracks or spalling was observed. The vertical column and wall surfaces are flat and smooth.

Superstructure Images:

Exhibit B2.2

Exhibit B2.3

- Concrete patchwork of the original structure is in excellent condition. The patchwork is flat and smooth.
- The expansion joints at the original superstructure to the renovation superstructure are in excellent condition. No deterioration was observed.
- The original reinforced concrete pan joist slab systems are in good condition. No major cracks or spalling was observed. Small cracking and spalling exist but are of no concern. The suspended slab surface is flat and smooth. Refer to Superstructure Images: Exhibit B2.1 (page 5).
- The reinforced concrete walls of the renovation stage are in excellent condition. No major cracks or spalling was observed. The vertical wall surface is flat and smooth.
- The steel wide flange columns are in excellent condition. No corrosion was observed. Column base plate connections are in excellent condition. Refer to Superstructure Images: Exhibit B2.2 (page 6).
- The steel wide flange beams are in excellent condition. No corrosion or significant deflection was observed. Beam connections are primarily in excellent condition. Concrete anchors of the beam connection pulling out of concrete were observed in the ceiling of the corridor at the Press Level, as shown under Superstructure Images: Exhibit B2.3 (page 6).
- The steel decks are in excellent condition. No corrosion or significant deflection was observed.
- The structural steel of the scoreboard is in excellent condition. No corrosion or significant deflection was observed. Beam, column and bracing connections are in excellent condition. Refer to Superstructure

Superstructure Images:

Exhibit B2.4

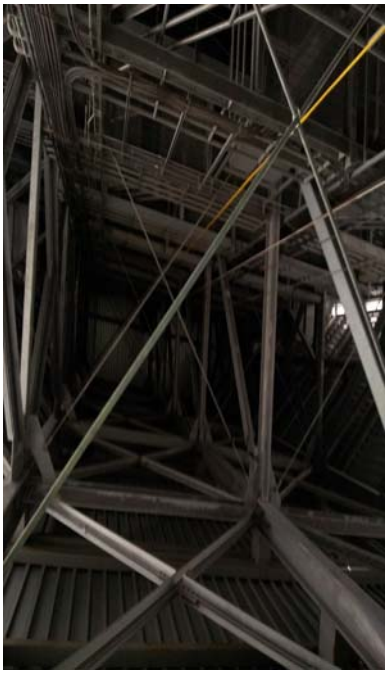


Exhibit B2.5

Images: Exhibit B2.4 (right).

- Guard rails are primarily in good condition. However, corrosion and concrete spalling were observed in some locations, as shown under Superstructure Images: Exhibit B2.5 (page 7).

3. Facades

Description:

- Primary
  - Insulated Metal Wall Panel on Cold Formed Steel Substructure
  - Curtain Wall Glazing
  - Concrete Seating Bowl
- Secondary
  - Stone Cladding and Glass Storefront (Base)
  - Graphic Mesh Panel on Steel Frame
- Tertiary
  - Fencing
  - Metal Entry Canopy

Observation/Comments:

- All façades, in general, appear to be in excellent condition.
- Metal panel and graphic mesh systems appear to be in excellent condition and do not show signs of oil canning, staining, or degradation of any kind.
- Stone cladding systems appear to be in excellent condition and do not show signs of chipping or staining. Grout joints appear to be in good condition.
- Glass storefronts appear to be in excellent condition and do not show signs of staining, fading, or degradation of any kind. Seals around storefront appear to be in good condition.
- Refer to Façade Images: Exhibit B3.1 and B3.2 (right) for typical façade conditions.

Facades Images:

Exhibit B3.1

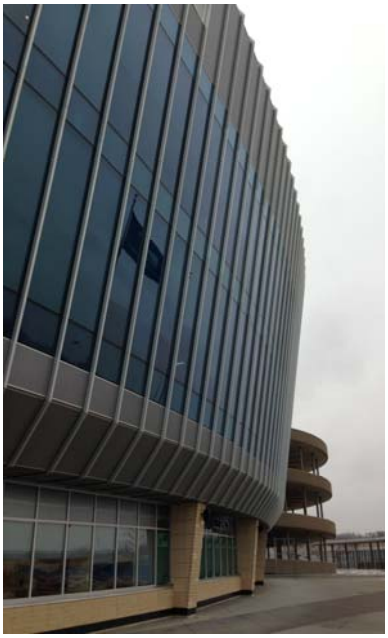


Exhibit B3.2

Roofing Images:

Exhibit B4.1

4. Roofing (Main and Canopy)

Description:

- Primary
  - Polyvinyl-Chloride (PVC) Membrane Roofing on R-24 Insulation (typical)
  - Coping and Fascia painted to Match Metal Panel (typical)
- Secondary
  - Standing Seam Metal Roof

Observation/Comments:

- Roofing membranes appear to be in good condition and do not show signs of rips, tears, or other failures.
- All observed copings, flashings, etc. appear to be in excellent condition.
- Metal roofing appears to be in good condition and does not show any signs of rust or staining.
- Refer to Roofing Images: Exhibit B4.1 (page 8) and B4.2 (right) for typical roofing condition.

C. Interior Elements

1. Floors

Description:

- Primary
  - Epoxy Floor Topping System
  - Sealed Concrete
- Secondary
  - Ceramic Tile
  - Carpet
- Tertiary
  - Vinyl Composition Tile
  - Athletic Rubber Flooring

Observation/Comments:

- Flooring surfaces are generally in excellent condition.
- Epoxy floors are showing excellent resistance

Roofing Images:

Exhibit B4.2

Flooring Images:

Exhibit C1.1

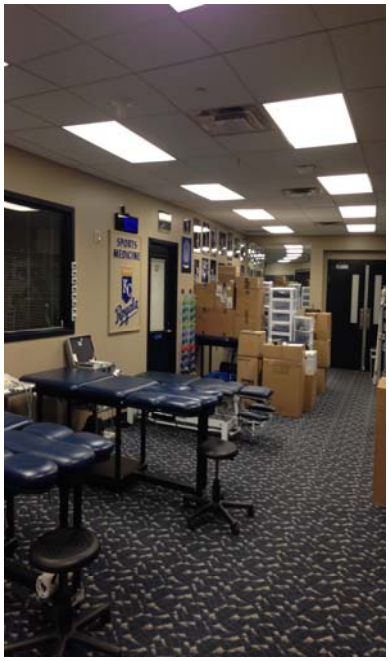
Exhibit C1.2

to wear and tear. Refer to Flooring Images: Exhibit C1.1 (page 9) for typical conditions at acrylic/epoxy flooring.

- Sealed or painted flooring appears to be in good condition with no visible chipping or flaking of finish.
- Ceramic tile floors appear to be in excellent condition, generally. Tile base boards were observed delaminating from the walls in a dugout level suite. Refer to Flooring Images: Exhibit C1.2 (page 9). Consider replacing tile and grout in the near future to avoid further damage to adjacent floor/base tiles.
- Carpet, in general, is in excellent condition and does not show signs of rips, tears, or discoloration. Refer to Flooring Images: Exhibit C1.3 (right) for typical condition.

Flooring Images:

Exhibit C1.3



2. Walls

Description:

- Primary
  - Painted or Exposed Concrete Masonry Unit (CMU)
  - Painted Gypsum Board on Metal Stud
- Secondary
  - Wood Veneer
  - Glazed Storefront System

Observation/Comments:

- Painted and exposed block walls appear to be in excellent condition with no visible chipping, flaking, or cracking of the applied paint system. Refer to Wall Images: Exhibit C2.1 (right) for typical condition.
- Painted gypsum board walls appear to be in excellent condition and do not show signs of punctures or holes in the gypsum board material. Minimal scuffing was observed in various locations back of house spaces due to normal wear and tear. Refer to Wall Images:

Wall Images:

Exhibit C2.1

Exhibit C2.2 (right) for typical condition.

- Glazed storefront systems appear to be in excellent condition and do not show signs of staining, fading, or degradation of any kind. Seals around storefronts appear to be in good condition.
- Wood veneer located in the hall of fame area is in excellent condition and does not show signs of deterioration of any kind. Refer to Wall Images: Exhibit C2.3 (right) for typical condition.

3. Ceilings

Description:

- Primary
  - Exposed or Painted (typical)
- Secondary
  - Gypsum Board on Metal Framing
- Tertiary
  - Acoustic Ceiling Tile

Observation/Comments:

- Exposed and painted ceilings appear to be in good condition. Refer to Ceiling Images: Exhibit C3.1 (right) for typical condition.
- Gypsum board ceilings appear to be in excellent condition, in general. However, at the Stadium Club Dining room excessive leaking through the roof has caused damage to the paint/drywall adjacent to the curtain wall system. Refer to Ceiling Images: Exhibit C3.2 (page 12). Repair of drywall and paint is necessary in the near future. Consider acquiring analysis and solution by a roofing consultant to prevent future water damage.
- Acoustic ceiling tile appears to be in good condition, in general. Several back of house spaces, including kitchens and pantry areas, contained warped, drooping, or stained ceiling tiles. Refer to Ceiling Images: Exhibit C3.3

Wall Images:

Exhibit C2.2

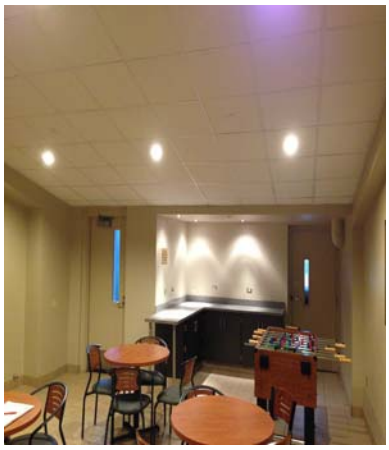
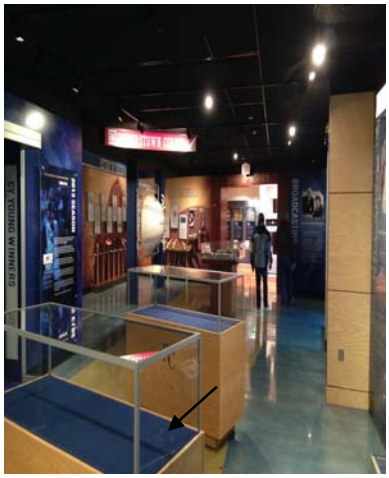
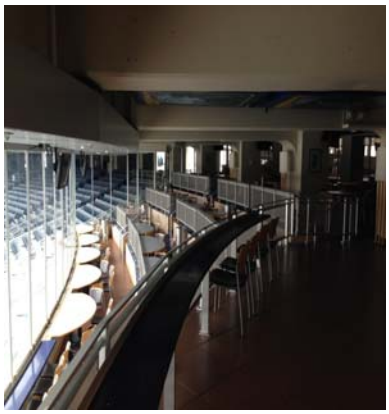


Exhibit C2.3



Ceiling Images:

Exhibit C3.1



(page 12) as an example. Consider replacing ceiling tile at such locations in the near future.

4. Doors

Description:

- Painted Hollow Metal Door and Frames
- Flush Wood Doors
- Aluminum Glazed Doors
- Overhead Coiling Doors
- Access Doors

Observation/Comments:

- All doors, in general, are in excellent condition.
- Painted hollow metal back of house doors are in generally good condition. Some doors, particularly in the underground tunnel between Arrowhead and The K, appeared to be scuffed or scratched in various locations. Consider repainting such doors to avoid the spread of rust and corrosion.
- Refer to Door Images: Exhibit C4.1 and C4.2 (page 13) for typical conditions.

D. Plumbing, HVAC and Electrical

1. Plumbing

Description:

- A document review of existing plumbing plans and specifications was performed in preparation for a site visit to observe the mechanical systems at Kauffman Stadium. During the site visit engineers were tasked with observing equipment operating condition and general maintenance operational checks outlined in the Observation/Comments section of this report. The scope of the report is limited to only a fraction of the equipment installed on the site, ie. not all systems, equipment, plumbing fixtures, etc. were observed. Due to the nature of the scope plumbing fixture shop drawings, submittals and system testing commissioning (Cx) reports were not reviewed as part of this

Ceiling Images:

Exhibit C3.2

Exhibit C3.3

report.

- The plumbing systems within the building appear to have been renovated "as needed" with the latest updates performed in 2009. The majority of the plumbing systems observed appear to be in very good condition. There were no major issues and everything observed appeared to be compliant with local code. The following is a detailed review of the plumbing systems and any current deficiencies within the building.

Observation/Comments:

- Plumbing piping insulation in various areas of the facility are degrading and in need of repair. Reference Plumbing Images: Exhibit D1.1 (page 14).
- Plumbing piping appears to be properly labeled with direction of flow and valves are clearly tagged. Reference Plumbing Images: Exhibit D1.2 (page 14).
- Facility central PVI water heating boilers appear to be in good condition. Reference Plumbing Images: Exhibit D1.3 (page 14).
- Plumbing fixtures and associated flush valves, faucets, etc. appear to be in good working order.
- Plumbing installed over electrical equipment/components has the required metal drip pan and associated drain line. Reference Plumbing Images: Exhibit D1.4 (page 15).
- Access doors to shutoff valves in public restrooms should remain locked during operating hours in an effort to avoid vandalism to concealed piping, valves, etc.
- Water pressure, temperatures and drainage to plumbing fixtures exposed to the outside elements could not be observed due to ambient temperature (30 deg. F) at time of site

Door Images:

Exhibit C4.1

Exhibit C4.2

visit. All exposed restrooms were winterized at the time of site observation.

- Fountain system could not be observed due to ambient temperature (30 deg. F) at time of site visit. All exposed restrooms were winterized at the time of site observation.
- Domestic water booster pump skid appear to be in good condition. Piping is insulated and tagged with direction of flow properly indicated. Loge and View Levels maintain pressure at 100 psi and lower levels are set at 80 psi via pressure reducing valves. Reference Plumbing Images: Exhibit D1.5 (page 15).
- Roof drainage system was observed to be generally clean and unobstructed. Reference Plumbing Images: Exhibit D1.6 (page 16).

2. Heating and Air Conditioning

Description:

- A document review of existing mechanical HVAC plans and specifications was performed in preparation for a site visit to observe the mechanical systems at Kauffman Stadium. During the site visit engineers were tasked with observing equipment operating condition and general maintenance operational checks outlined in the Observation/Comments section of this report. The scope of the report is limited to only a fraction of the equipment installed on the site, ie. not all systems, equipment, controls, etc. were observed. Due to the nature of the scope mechanical equipment shop drawings, submittals, operation and maintenance manuals, test and balance (TAB) and system testing commissioning (Cx) reports were not reviewed as part of this report.
- The mechanical systems within the building appear to have been renovated "as needed" with the latest updates performed in 2009.

Plumbing Images:

Exhibit D1.1

Exhibit D1.2

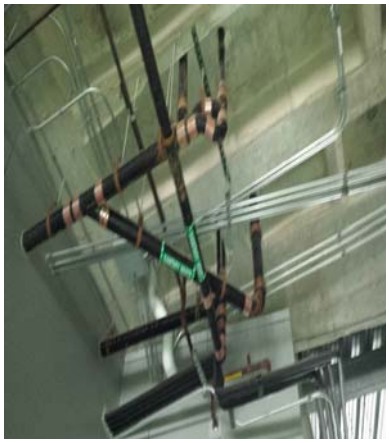


Exhibit D1.3

The majority of the mechanical systems observed appear to be in very good or like new condition. There were no major issues and everything observed appeared to be compliant with local code. The following is a detailed review of each system and any current deficiencies within the building. Various equipment and general maintenance checks were observed regarding the following equipment:

Observation/Comments:

- Site observations are beneficial because they identify problems early in the life of the equipment where they can be ameliorated more cost effectively. The primary purpose of the site observations is to provide JCSCA with an overall sampling of mechanical systems such that the overall condition of equipment and maintenance procedures can be reviewed.
- Variable Air Volume (VAV) Terminal Units
  - Deficiencies
    - None observed.
  - System Maintenance Checks Observed by Engineer
    - Equipment tagged.
    - Accessible for maintenance.
    - Ductwork complete.
    - Insulation complete.
    - Electrical components in place.
    - Controls components in place.

- Fan Powered Terminal Units
  - Deficiencies
    - Filters – On more than one observation the filters appeared to be dirty and past due for replacement. It is suggested to replace filters every 3 to 6 months depending on equipment use. Reference Mechanical Images: Exhibit D2.1 (page 16).

Plumbing Images:

Exhibit D1.4

Exhibit D1.5

- System Maintenance Checks Observed by Engineer
  - Equipment tagged.
  - Accessible for maintenance.
  - Filters clean.
  - Ductwork complete.
  - Insulation complete.
  - Electrical components in place.
  - Controls components in place.

- Air Handling Units
  - Deficiencies
    - Filters – On more than one observation the filters appeared to be dirty and past due for replacement. It is suggested to replace filters every 3 to 6 months depending on equipment use.
  - System Maintenance Checks Observed by Engineer
    - Equipment tagged.
    - Maintenance access acceptable for unit and components.
    - Piping complete, properly supported, insulated and labeled.
    - Piping system pressure and temperature clearly identified.
    - Isolation, balancing and control valves installed and operable.
    - Fans and motors properly aligned and lubricated.
    - Belt tension and condition checked
    - Filters clean.
    - Controls components in place.
    - Power disconnects installed and labeled. All safeties operable.
    - Variable Frequency Drive (VFD) operational.

- Computer Room Air Conditioning Unit (CRAC)
  - Deficiencies

Plumbing Images:

Exhibit D1.6

HVAC Images:

Exhibit D2.1

Exhibit D2.2

- ❖ Condensate leaking through casing onto floor. Note the water stain on the floor. Reference Mechanical Images: Exhibit D2.2 (page 16).
- o System Maintenance Checks Observed by Engineer
  - ❖ Equipment tagged.
  - ❖ Accessible for maintenance.
  - ❖ Ductwork complete.
  - ❖ Piping and insulation complete.
  - ❖ Fans and motors properly aligned and lubricated.
  - ❖ Belt tension & condition checked.
  - ❖ Electrical components in place.
  - ❖ Controls components in place.

- Condensing Units
  - o Deficiencies
    - ❖ None observed.
  - o System Maintenance Checks Observed by Engineer
    - ❖ Equipment tagged.
    - ❖ Clean outdoor condenser coils.

- Electric Unit Heaters
  - o Deficiencies
    - ❖ None observed.
  - o System Maintenance Checks Observed by Engineer
    - ❖ Equipment tagged.
    - ❖ Check for excessive noise or vibrations from fan.
    - ❖ Reference HVAC Images: Exhibit D2.3 (right).

- Exhaust Fans
  - o Deficiencies
    - ❖ None observed.
  - o System Maintenance Checks Observed by

HVAC Images:

Exhibit D2.3

Exhibit D2.4

Exhibit D2.5

Engineer
- ❖ Equipment tagged.
- ❖ Check bearings for noise.
- ❖ Reference HVAC Images: Exhibit D2.4 (page 17).

- Transfer Fans
  - o Deficiencies
    - ❖ None observed.
  - o System Maintenance Checks Observed by Engineer
    - ❖ Equipment tagged.
    - ❖ Check bearings for noise.

- Motorized Dampers
  - o Deficiencies
    - ❖ None observed.
  - o System Maintenance Checks Observed by Engineer
    - ❖ Check damper action is smooth over full travel.
    - ❖ Check position of damper blades at full open and close positions.
    - ❖ Check linkage and bearings for slack or wear.

- Due to the ambient conditions present at the time of the site visit, (30 deg. F) various equipment was not operational and unable to be observed.
  - o Chillers
    - ❖ Equipment tagged.
    - ❖ Check for excessive noise and vibration.
    - ❖ Check for excessive temperatures and pressures.
  - o Roof Top Units – Direct Expansion (DX)
    - ❖ Equipment tagged.
    - ❖ Maintenance access acceptable for unit

HVAC Images:

Exhibit D2.6

Exhibit D2.7

and components.

- ❖ Fans and motors properly aligned and lubricated.
- ❖ Belt tension and condition checked.
- ❖ Filters clean.
- ❖ Power disconnects installed and labeled. All safeties operable.
- ❖ Reference HVAC Images: Exhibit D2.5 (page 17) for observed condition.

- General Comments – Heating Ventilation and Air Conditioning (HVAC)
  - o Grease exhaust systems in the concessions area were noted to be in need of cleaning. Exhaust grilles should be scrubbed or replace in several areas. Reference HVAC Images: Exhibit D2.6 (page 18).
  - o Supply air diffusers were obstructed with cardboard in the press box suggesting occupants are uncomfortable with the volume of air supplied to the space. Suggest rebalancing the supply air system. Reference HVAC Images: Exhibit D2.7 (page 18).

3. Electrical

Description:

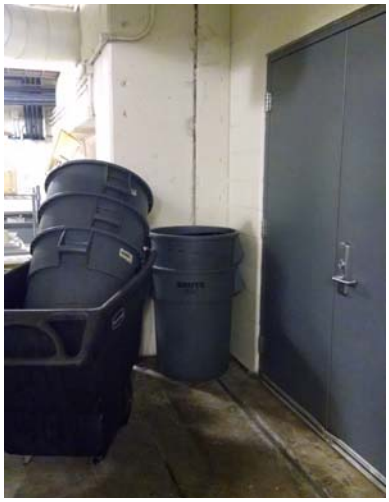
- The stadium is fed from (7) 3,000A, (2) 1,600A, and (2) 4,000A 480Y/277V 3 phase, 4 wire main switchgear with integral 13.2kV to 480V transformers. The switchgear is located throughout the Service level, Plaza level, and in the chiller area.
- A main 1,600A 480Y/277V, 3 phase, 4 wire switchgear are used for emergency power and are connected to a 1000KW on-site generator.
- Branch circuit panel boards are located throughout the stadium, utilizing circuit breakers for overcurrent protection.
- The telecommunications system is fed from an

Electrical Images:

Exhibit D3.1

Exhibit D3.2

Exhibit D3.3



underground vault is run to the Main Communications room on the Service level.

- Fiber is run throughout the stadium to various telecommunications rooms, and copper cabling is run to data outlets via cable tray.

Observation/Comments:

- The overall electrical system looks to be in excellent shape.
- Most electrical rooms are kept clear of debris and obstructions. Several rooms, mostly in food service areas, have racks or other obstructions in front of panel boards and exit doors, making it a code violation. Some of these violations are shown under Electrical Images: Exhibit D3.1 through D3.3 (page 19).
- All panel boards observed were well labeled and included type-written, laminated panel board schedule. All emergency panels were labeled with red placards, making it easy to identify quickly in an emergency situation.
- Fire-barrier sealant looks to be in good condition and is located around wall and ceiling penetrations, as shown under Electrical Images: Exhibit D3.4 (right).
- Most plug mold receptacles observed were in good condition. A couple of receptacles were secured with black electricians tape to the plug mold, as shown under Electrical Images: Exhibit D3.5 (right).
- A junction box, located in Mechanical Room 2 MB300B, did not have a cover over the box. It also appears to have quite a few splices in the box. A professional engineer should verify if the junction box is of adequate size for the number of terminations and the cover should be secured on the junction box. The junction box is shown under Electrical Images: Exhibit D3.6 (right).
- Telecommunications rooms are well organized

Electrical Images:

Exhibit D3.4

Exhibit D3.5

Exhibit D3.6

and all cabling is secured to cable tray, as shown under Electrical Images: Exhibit D3.7 (right).

- Telecommunications racks observed are in good condition, and both the rack equipment and cables are labeled as needed, as shown under Electrical Images: Exhibit D3.8 (right).

E. Elevators and Escalators

1. Elevators

Description:

- Passenger Elevators
- Freight Elevators

Observation/Comments:

- Passenger elevators were observed as being in excellent condition and functioning as normal.

2. Escalators

Description:

- Passenger Escalators

Observation/Comments:

- Escalators appear to be in good condition. No significant scratching, scuffing, or other damage was observed. At the time of observation, none of the escalators were turned due to energy conservation.

Electrical Images:

Exhibit D3.7

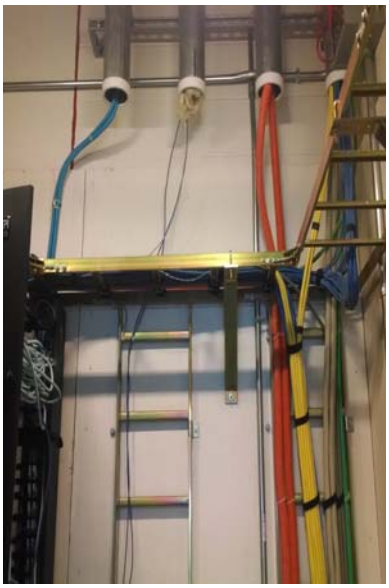


Exhibit D3.8

IV. BMcD Recommendations - Summary

A. Immediate

- Site
  - Perform routine maintenance to seal and repair minor cracking observed along walkways and concourses.
  - Excessive cracking was observed near the east entry gate at the edge of the polished surface of the concourse and exterior walkway. Consider repairing this area prior to the 2014 season to avoid additional damage.
- Structural
  - The majority of all structural elements appear to be in excellent condition. Continue routine maintenance as required.
  - Concrete anchors at the ceiling of the Broadcast Press Level corridor (near the bar) were observed to be pulling out of the concrete. Analysis by a qualified structural engineer is recommended prior to the 2014 season to verify that no structural failures have occurred and to ensure that the structural system is performing as designed.
  - Guard rails are generally in good condition. However, corrosion and concrete spalling was observed in some locations. Consider reinforcing guard rail and patching concrete surrounding railing base to avoid additional damage and/or guard rail failure.
- Architectural
  - No major problem areas were observed that would require immediate attention. Refer to Short Term recommendations below.
- Mechanical/Plumbing
  - In general, all mechanical and plumbing systems have been well maintained and appear to be in excellent condition.
  - It is suggested to replace filters at air handling units every 3 to 6 months depending on equipment use.

Dirty filters and equipment casing were observed in several locations.

- The Computer Room Air Conditioning Unit (computer room) was observed to have condensate leaking through casing onto floor. Maintenance must be performed to avoid significant water collection and electrical malfunction.

- Electrical
  - In general, all electrical elements appear to be in excellent condition.
  - Ensure that all electrical panels are kept clear of debris and obstructions. Several rooms, mostly in food service areas, have racks or other obstructions in front of panel boards and exit doors, making it a code violation.
  - A junction box, located in Mechanical Room 2 MB300B, did not have a cover over the box. It also appears to have quite a few splices in the box. A professional engineer should verify if the junction box is of adequate size for the number of terminations and the cover should be secured on the junction box.

IV. BMcD Recommendations - Summary

B. Short Term (0-1 years)

- Site
  - Refer to immediate recommendations on page 22.
- Structural
  - Refer to immediate recommendations on page 22.
- Architectural
  - Ceramic tile floors appear to be in generally excellent condition. However, tile base boards were observed to be delaminating from the walls in a few dugout level suites. Consider replacing tile and grout in the near future to avoid further damage to adjacent floor/base tiles.
  - Gypsum board ceilings appear to be in excellent condition, in general. However, at the Stadium Club Dining room excessive leaking through the roof has caused damage to the paint/drywall adjacent to the curtain wall system. Repair of drywall and paint is necessary in the near future. Consider acquiring analysis and solution by a roofing consultant to prevent future water damage.
  - Acoustic ceiling tile appears to be in good condition, in general. Several back of house spaces, including kitchens and pantry areas, contained warped, drooping, or stained ceiling tiles. Consider replacing ceiling tile at such locations in the near future.
- Mechanical/Plumbing
  - Grease exhaust systems in the concessions area were noted to be in need of cleaning. Exhaust grilles should be scrubbed or replaced in several areas.
  - Supply air diffusers were obstructed with cardboard in the press box suggesting occupants are uncomfortable with the volume of air supplied to the space. Suggest rebalancing the supply air system.
- Electrical
  - Refer to immediate recommendations on page23.