



# Arrowhead Stadium Assessment | 2014

## JCSCA + Burns & McDonnell

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

**Jackson County Sports  
Complex Authority**



2 / 14 / 2014

**Burns &  
McDonnell**  
SINCE 1898

## Report Outline

### Table of Contents

I.	Purpose and Scope .....	2
II.	Executive Summary .....	3
	a. General Description .....	3
	b. General Condition .....	3
	c. Recommendations .....	3
III.	Description and Conditions .....	4-20
	a. Site .....	4-5
	b. Frame and Envelope .....	5-8
	c. Interior Elements .....	8-11
	d. Plumbing, HVAC and Electrical .....	11-19
	e. Elevators and Escalators .....	20
IV.	BMcD Recommendations - Summary .....	21-22



## I. Purpose and Scope

---

### A. Purpose

The Kansas City Chiefs organization has a lease with the Jackson County Sports Complex Authority (JCSCA) that requires the organization to maintain Arrowhead stadium to a level consistent with a First Class NFL Football Stadium. The purpose of this study is to report the overall condition of Arrowhead 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 Arrowhead 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 received the database, interviewed Kansas City Chiefs staff and reviewed 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

Arrowhead Stadium, located at One Arrowhead Drive 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 Chiefs and its other users. The stadium holds approximately 80,000 fans and offers amenities such as club level suites, luxury suites, bars, restaurants, and other venues geared towards large scale entertainment.

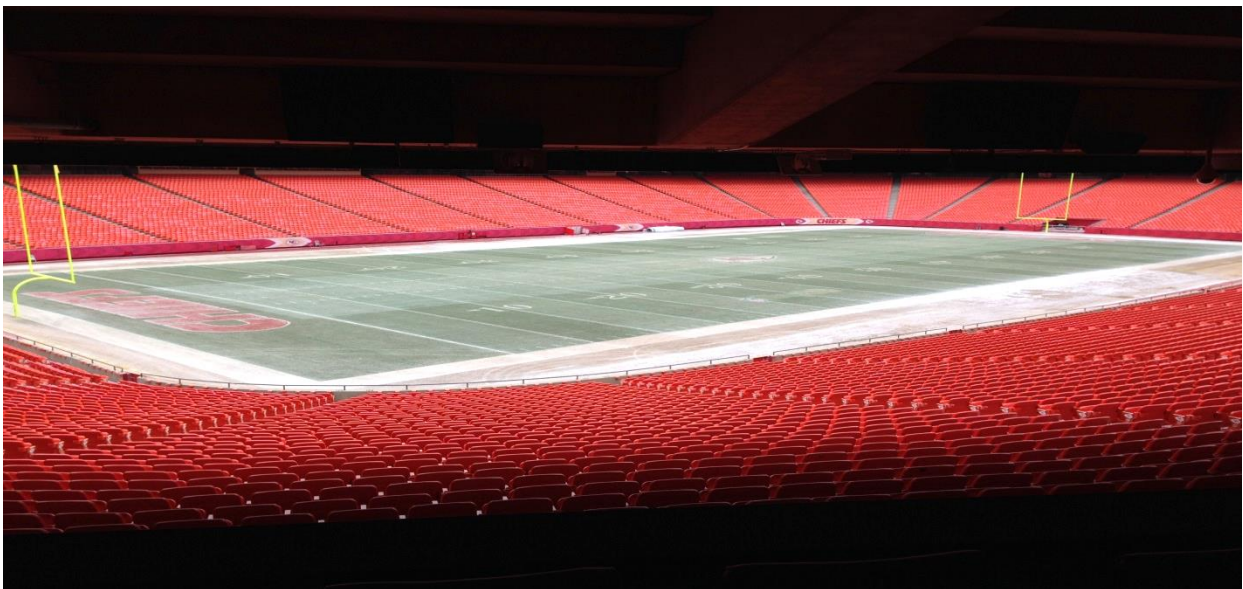
### B. General Condition

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

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

### C. Recommendations

There are no major items that require a recommendation to resolve. Section III – Description and Condition includes recommendations for the deficiencies observed for each building or site category. These 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.
- Arrowhead contains numerous concrete retaining walls and stairs between the curb cut and the stadium concourse.
- Concrete Walkways are abundant surrounding the stadium.

###### Observation/Comments:

- Walls and Stairs
  - No significant deterioration was observed.
- 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](#) and [A1.2](#) (right).

##### 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:

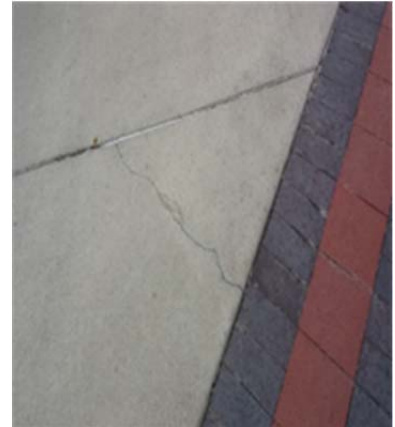
- All landscaping observed was in a dormant stage at the time of observation, but appears to be well maintained and in good condition. Refer to Landscaping Images: [Exhibit A2.1](#) (right).
- Significant cracking and deterioration of planter curbs on the east and west side of the stadium has occurred, particularly at corners as shown

###### Flatwork Images:

[Exhibit A1.1](#)



[Exhibit A1.2](#)



###### Landscape Images:

[Exhibit A2.1](#)



under Landscaping Images: [Exhibit A2.2](#) (right). This curbing should be repaired in the very near future.

## 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.
- Controls joint 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. Refer to Superstructure Images: [Exhibit B2.1](#) and [B2.2](#) (right).
- Primarily reinforced concrete columns throughout the superstructure. Other vertical support systems include Hollow Structural Section (HSS) columns, reinforced concrete and Concrete Masonry Unit (CMU)

[Exhibit A2.2](#)



#### Superstructure Images:

[Exhibit B2.1](#)



[Exhibit B2.2](#)



load bearing walls.

- Plaza, Club and Lower-Upper Concourse levels consist primarily of reinforced concrete pan joist slab system.
- Upper Concourse level primarily consists of non-composite steel roof deck supported by steel wide flange beams. Other floor systems consist of cold form metal joists with steel deck.
- Horizon and Press level 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.
- Lateral system consists of reinforced concrete load bearing 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.
- Concrete patchwork of the original structure is in excellent condition. The patchwork is flat and smooth. Refer to Superstructure Images: [Exhibit B2.3](#) (right).
- The expansion joints between the original superstructure and the renovation superstructure are in excellent condition. No deterioration was observed. Refer to Superstructure Images: [Exhibit B2.2](#) (page 5) and [B2.4](#) (right).
- 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.
- The steel wide flange columns are in

#### Superstructure Images:

[Exhibit B2.3](#)



[Exhibit B2.4](#)



[Exhibit B2.5](#)



excellent condition. No corrosion was observed. Column base plate connections are in excellent condition. Refer to Superstructure Images: [Exhibit B2.5](#) (page 6).

- The steel wide flange beams are in excellent condition. No corrosion or significant deflection was observed. Beam connections are in excellent condition.
- The steel decks are in excellent condition. No corrosion or significant deflection was observed.

### 3. Façades

#### Description:

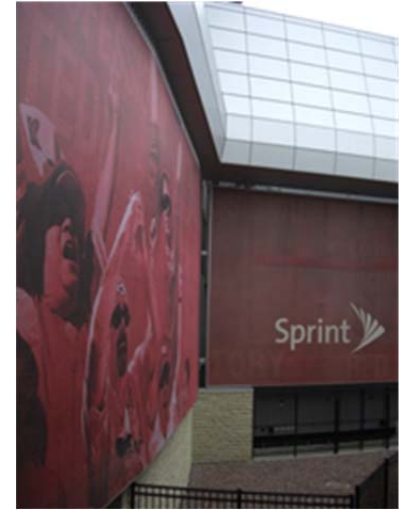
- Primary
  - Insulated Metal Wall Panel on Cold Formed Steel Substructure
  - Curtain Wall Glazing
- Secondary
  - Stone Cladding and Glass Storefront (Base)
  - Graphic Mesh Panel on Steel Frame
- Tertiary
  - Fencing
  - Metal Entry Canopy

#### Observation/Comments:

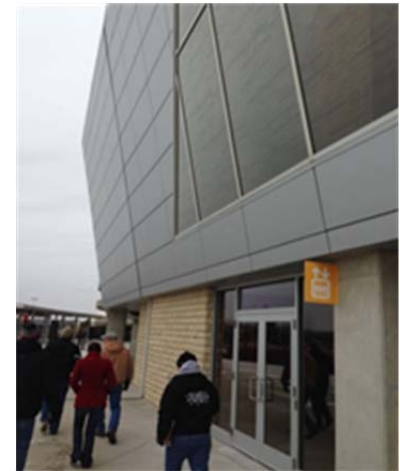
- All façades, in general, appear to be in excellent condition.
- Metal panel and graphic mesh systems appear to be in excellent condition and do not show signs of oil canning, staining, or degradation of any kind.
- Stone cladding systems appear to be in excellent condition and do not show signs of 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

#### Façade Images:

[Exhibit B3.1](#)



[Exhibit B3.2](#)



#### Roofing Images:

[Exhibit B4.1](#)





around storefront appear to be in good condition.

- Refer to Façade Images: [Exhibits B3.1 and B3.2](#) (page 7) for typical façade conditions.

#### 4. Roofing (Main and Canopy)

##### Description:

- Primary
  - Polyvinyl-Chloride 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 7) 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 Images:

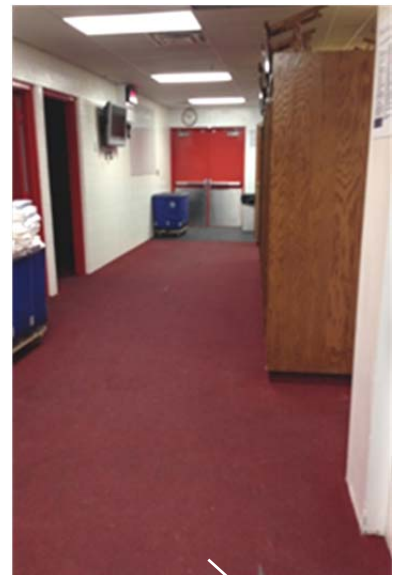
[Exhibit C1.1](#)



[Exhibit C1.2](#)



[Exhibit C1.3](#)



- Flooring surfaces are generally in excellent condition.
- Epoxy floors are showing excellent resistance to wear and tear. Refer to Flooring Images: [Exhibit C1.1](#) (page 8) for typical conditions at 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. Refer to Flooring Images: [Exhibit C1.2](#) (page 8) for typical conditions.
- Minor carpet rips and tears were found in the visiting locker room, as shown under Flooring Images: [Exhibit C1.3](#) (page 8). Bunns & McDonnell recommends considering carpet replacement within the next one to three years.

## 2. Interior Walls

### Description:

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

### Observation/Comments:

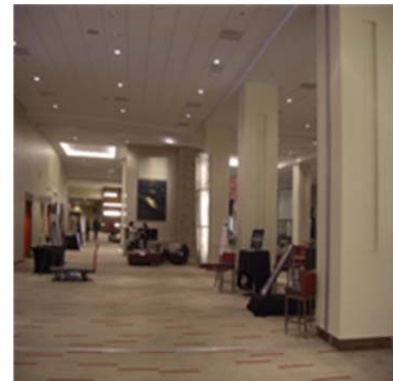
- Painted and exposed block walls appear to be in excellent condition with no visible chipping, flaking, or cracking of the applied paint system. Refer to Interior Wall Images: [Exhibit C2.1](#) (right) for typical condition.
- Painted gypsum board walls appear to be in excellent condition and do not show signs of punctures or holes in the gypsum board

### Interior Wall Images:

[Exhibit C2.1](#)



[Exhibit C2.2](#)



[Exhibit C2.3](#)



material. Minimal scuffing was observed in various locations back of house spaces due to normal wear and tear. Refer to Interior Wall Images: [Exhibit C2.2](#) (page 9) 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.
- Ceramic Tile in high end bathrooms appear to be in excellent condition and do not show signs of chipping or cracking. Mortar joints appear to be in good condition and do not show signs of dirt, grime, or chipping. Refer to Interior Wall Images: [Exhibit C2.3](#) (page 9) for typical condition.

### 3. Ceilings

#### Description:

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

#### Observation/Comments:

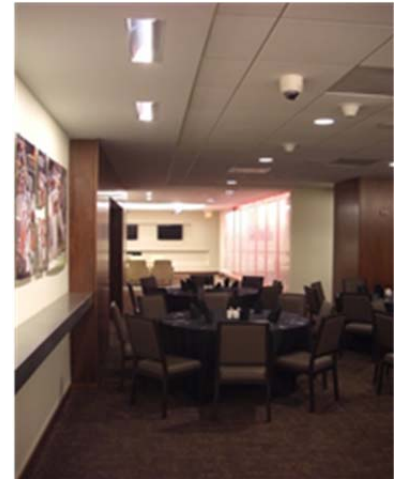
- Exposed and painted ceilings appear to be in good condition. Refer to Ceiling Images: [Exhibit C3.1](#) (right) for typical condition.
- Gypsum board ceilings appear to be in excellent condition, in general. Refer to Ceiling Images: [Exhibit C3.2](#) (right) for typical condition.
- Acoustic ceiling tile appears to be in excellent 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](#)

#### Ceiling Images:

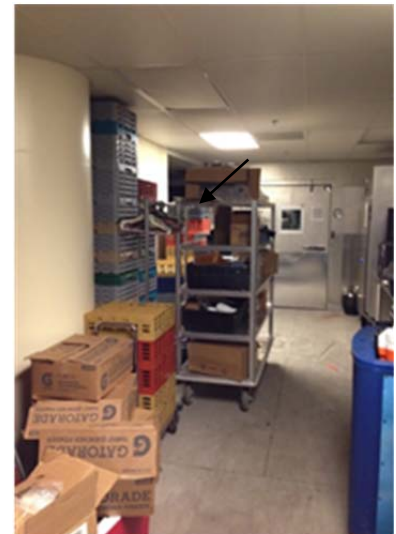
[Exhibit C3.1](#)



[Exhibit C3.2](#)



[Exhibit C3.3](#)



C3.3 (right) 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. Refer to Door Images: [Exhibit C4.1](#) and [C4.2](#) (right) for typical condition.
- Painted hollow metal back of house doors are in generally good condition. Some doors, particularly in the underground tunnel between Arrowhead and Kauffman Stadiums, appeared to be scuffed or scratched in various locations. Consider repainting such doors to avoid the spread of rust and corrosion.

#### 5. Casework

##### Description:

- Natural Wood Veneer
- Laminate

##### Observation/Comments:

- All casework appears to be in excellent condition and no signs of scratching, chipping, or scuffing of the veneers were observed. Refer to Casework Images: [Exhibit C5.1](#) (right) for typical condition.

#### D. Plumbing, HVAC and Electrical

##### 1. Plumbing

##### Description:

- A document review of existing plumbing plans and specifications was performed in

##### Door Images:

[Exhibit C4.1](#)



[Exhibit C4.2](#)



##### Casework Images:

[Exhibit C5.1](#)





preparation for a site visit to observe the mechanical systems at Arrowhead 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 report.

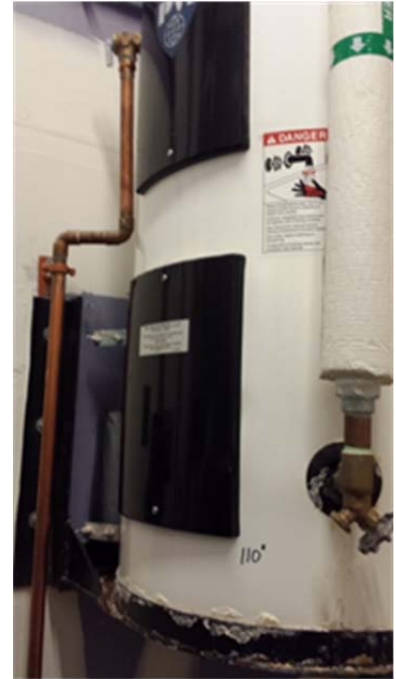
- The plumbing systems within the building appear to have been renovated “as needed” with the latest updates performed in the spring of 2012. The majority of the plumbing systems observed appear to be in very good or like new condition. There were no major issues and everything observed appeared to be compliant with local code. The following is a review of the plumbing systems and any current deficiencies within the building.

#### Observation/Comments:

- Various water heaters throughout the facility appear to have corrosion at the base of the exterior shell. This is possibly due to the storage of chemicals in the same room with a lack of ventilation. Reference Plumbing Images: [Exhibit D1.1](#) (right). Piping insulated, labeled and flow direction identified. Water heater showing signs of corrosion at base.
- Plumbing piping appears to be properly labeled with direction of flow and valves are clearly tagged. Reference Plumbing Images: [Exhibit D1.2](#) (right).

#### Plumbing Images:

[Exhibit D1.1](#)



[Exhibit D1.2](#)



- Plumbing fixtures and associated flush valves, faucets, etc. appear to be in nearly new condition and very clean. Reference Plumbing Images: [Exhibit D1.3](#) (right).
- Plumbing installed over electrical equipment/components has the required metal drip pan and associated drain line. Reference Plumbing Images: [Exhibit D1.4](#) (right).
- 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.
- Natural gas piping serving kitchens has the required emergency shut off valve which is accessible and clearly labeled.
- 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 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. Reference Plumbing Images: [Exhibit D1.5](#) (right –rotated 90° for size and clarity).

## 2. Heating and Air Conditioning

### Description:

- A document review of existing mechanical Heating, Ventilation, and Air Conditioning (HVAC) plans and specifications was performed in preparation for a site visit to observe the mechanical systems at Arrowhead Stadium. During the site visit engineers were tasked with observing equipment operating condition and general maintenance operational checks outlined in

### Plumbing Images:

[Exhibit D1.3](#)



[Exhibit D1.4](#)



[Exhibit D1.5](#)



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 the spring of 2012. Refer to HVAC Images: [Exhibit D2.1](#) and [D2.2](#) (right). 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.
- VAV Terminal Units
  - Deficiencies
    - None observed
  - System Maintenance Checks Observed

**HVAC Images:**

[Exhibit D2.1](#)



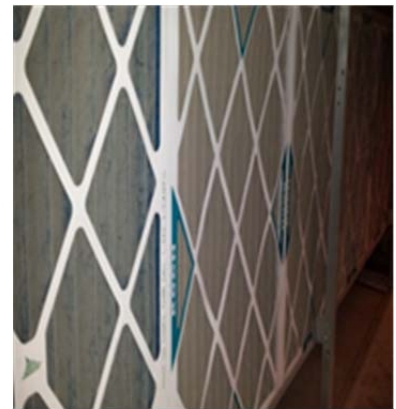
[Exhibit D2.2](#)



[Exhibit D2.3](#)



- by Engineer
  - Equipment tagged
  - Accessible for maintenance
  - Ductwork complete
  - Insulation complete
  - Electrical components in place
  - Controls components in place
- Fan Powered Terminal Units
  - Deficiencies
    - None observed
  - 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
    - Refer to HVAC Images: [Exhibit D2.3](#) (page 14)
- Air Handling Units
  - Deficiencies
    - Filters – On more than one observation the filters appeared to be dirty and past due for replacement. Approximately half the equipment filters were dated with black Sharpie on filter casing at the time of replacement making it easy for maintenance staff to see when filters are out of date when periodic checks are performed. Reference HVAC Images: [Exhibit D2.4](#) (right). It is suggested to replace filters every 3 to 6 months depending on equipment use. Dirty filters and equipment casing were observed as shown in HVAC Images: [Exhibit D2.5](#) and [D2.6](#) (right).

**HVAC Images:**[Exhibit D2.4](#)[Exhibit D2.5](#)[Exhibit D2.6](#)



- 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
- Reference HVAC Images: [Exhibit D2.7](#) (right – rotated 90° for size and clarity).
- Isolation, balancing and control valves installed and operable.
- Fans and motors properly aligned and lubricated.
- Belt tension and condition checked.
- Reference HVAC Images: [Exhibit D2.8](#) (right).
- Filters clean.
- Controls components in place.
- Power disconnects installed and labeled. All safeties operable.
- VFD operational.
- Computer Room Air Conditioning Unit (CRAC)
  - Deficiencies
    - Condensate leaking through casing onto floor.
  - 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.

**HVAC Images:**[Exhibit D2.7](#)[Exhibit D2.8](#)

- Electrical components in place.
  - Controls components in place.
- Condensing Units
  - Deficiencies
    - None observed.
  - System Maintenance Checks Observed by Engineer
    - Equipment tagged.
    - Clean outdoor condenser coils.
- Electric Unit Heaters
  - Deficiencies
    - None observed.
  - System Maintenance Checks Observed by Engineer
    - Equipment tagged.
    - Check for excessive noise or vibrations from fan.
    - Refer to HVAC Images: Exhibit D2.9 (right).
- Exhaust Fans
  - Deficiencies
    - None observed.
  - System Maintenance Checks Observed by Engineer
    - Equipment tagged.
    - Check bearings for noise.
- Transfer Fans
  - Deficiencies
    - None observed.
  - System Maintenance Checks Observed by Engineer
    - Equipment tagged.
    - Check bearings for noise.
- Motorized Dampers
  - Deficiencies
    - None observed.
  - System Maintenance Checks Observed by Engineer
    - Check damper action is smooth over full

**HVAC Images:**

Exhibit D2.9



Exhibit D2.10



- travel.
- Check position of damper blades at full open and close positions.
- Check linkage and bearings for slack or wear.
- Refer to HVAC Images: [Exhibit D2.10](#) (page 17).
- 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.
  - a) Chillers
    - Equipment tagged.
    - Check for excessive noise and vibration.
    - Check for excessive temperatures and pressures.
  - b) Roof Top Units – Direct Exchange (DX)
    - Equipment tagged.
    - Maintenance access acceptable for unit and components.
    - Fans and motors properly aligned and lubricated.
    - Belt tension and condition checked.
    - Filters clean.
    - Power disconnects installed and labeled. All safeties operable.

### 3. Electrical

#### Description:

- The stadium is fed from (10) 4,000A 480Y/277V 3 phase, 4 wire main switchgear with integral 13.2kV to 480V transformers. The switchgear is located throughout the Plaza level.
- (2) main 2,000A 480Y/277V, 3 phase, 4 wire switchgear are used for emergency power and are connected to (2) 1250KW on-site generators.

#### Electrical Images:

[Exhibit D3.1](#)



[Exhibit D3.2](#)



- Branch circuit panel boards are located throughout the stadium, utilizing circuit breakers for overcurrent protection.
- The telecommunications system is fed from a vault on the Field level and is run to the Main Communications room on the Plaza 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.
- 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, as shown under Electrical Images: [Exhibit D3.1](#) (page 18).
- Fire-barrier sealant looks to be in good condition and is located around wall and ceiling penetrations, as shown under Electrical Images: [Exhibit D3.2](#) (page 18 – rotated 90° for size and clarity).
- All plug mold receptacles observed were in good condition.
- The control panel cover located in Elevator Machine Room 420D is not on the panel, and is instead lying next to the panel, as shown under Electrical Images: [Exhibit D3.3](#) (right). It is advised to secure this panel cover to protect wiring from dust, debris, and unauthorized wiring changes.
- Telecommunications rooms are well organized and all cabling is secured to cable

**Electrical Images:**

[Exhibit D3.3](#)



[Exhibit D3.4](#)





tray, as shown under Electrical Images: [Exhibit D3.4](#) (page 19).

- Telecommunications racks observed are in good condition, and are labeled as needed, as shown under Electrical Images: [Exhibit D3.5](#) (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 excellent condition with regard to cleanness. No significant scratching, scuffing, or other damage was observed. At the time of observation, none of the escalators were turned on due to energy conservation. Refer to Escalator Images: [Exhibit E2.1](#) (right).

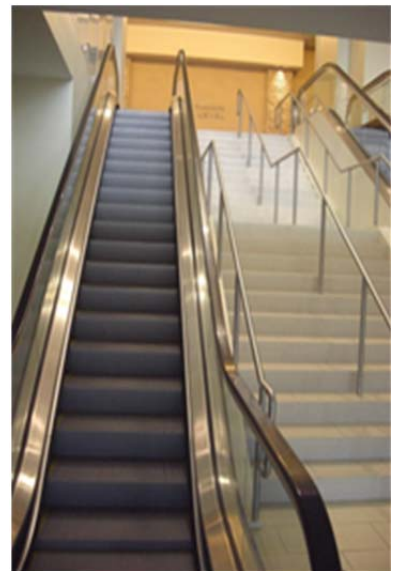
#### Electrical Images:

##### [Exhibit D3.5](#)



#### Escalator Images:

##### [Exhibit E2.1](#)



## IV. BMcD Recommendations - Summary

---

### A. Immediate

- Site
  - Perform routine maintenance to seal and repair minor cracking observed along walkways and concourses.
  - Significant cracking and deterioration of planter curbs on the east and west side of the stadium. Repair concrete in the near future to prevent additional damage.
- Structural
  - All structural elements appear to be in excellent condition. Continue routine maintenance as required.
- 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 three to six months depending on equipment use. Dirty filters and equipment casing were observed in several locations.
  - The Computer Room Air Conditioning Unit (computer room), the air conditioning unit 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 panel covers are installed properly and secured to protect wiring from dust, debris, and unauthorized wiring changes (typical).

## IV. BMcD Recommendations - Summary

---

### B. Short Term (0-1 years)

- Site
    - Refer to immediate recommendations on page 21.
  - Structural
    - All structural elements appear to be in excellent condition. Continue routine maintenance as required.
  - Architectural
    - Minor carpet rips and tears were found in the visiting locker room. Consider repairing or replacing the carpet within a few years.
    - Sagging or damaged ceiling tiles in several back of house space were observed. Consider replacing damaged tiles to avoid ceiling tile falling or damaging items located under the ceiling.
    - Painted hollow metal back of house doors are generally in good condition. Some doors, particularly in the tunnel between Arrowhead and Kauffman appeared to be scuffed or scratched in various locations. Consider repainting such doors to avoid the spread of rust and corrosion.
  - Mechanical/Plumbing
    - Refer to immediate recommendations on page 21.
  - Electrical
    - Refer to immediate recommendations on page 21.
-