

# ARCHITECTURE

STUDY BY: POPULOUS

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Community Meeting



# POPULOUS MLB EXPERIENCE

Worked with 29 of 30 MLB teams, including new ballparks or major renovations with 23 of 30 teams.



# THE 'K' - CURRENT STATE

**1973**

Opened in 1973  
(50 seasons -  
5th oldest stadium  
in baseball)

**2007 to  
2009**

Major renovation  
completed over  
multiple years

**350+  
items**

Completed facility  
Assessment to  
identify items to  
address earlier  
this year

**\$**

Assessment utilized to  
review potential  
renovation costs  
Renovation Cost Estimate:  
**\$1.072 billion**  
New Ballpark Cost Estimate:  
**\$1.005 billion**



# THE 'K' - CURRENT STATE



## ASR (Alkali-Silica Reaction)



- Commonly known as concrete cancer; its presence in the concrete at Kauffman has been confirmed with observations and testing.
- Reactive silica is present in the aggregate used, which reacts with the alkali hydroxide in the concrete to form a gel that expands as it absorbs water, which over time causes cracking, spalling and deterioration of the concrete at a rate much faster than typical concrete wear.
- There is evidence of ASR throughout the structure, which eventually results in replacement.



# THE 'K' - CURRENT STATE



## Fountain & Pump Room



- Evidence of breach in waterproofing of the fountain walls and slabs, allowing water to leak into the pump room which is located adjacent to the lower level of the fountain and below the upper level of the fountains.
- Resulted in deterioration of the concrete and corrosion of steel.



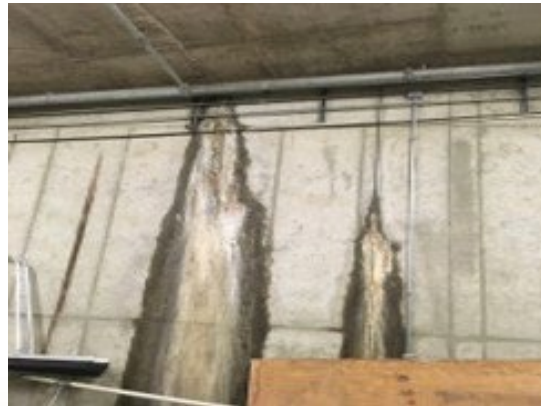
# THE 'K' - CURRENT STATE



## Right Field Service Tunnel



- Concrete cracking, spalling and rusting of hanger rods.
- Rods are the elements hanging from a large concrete transfer beam above the lid which assist in supporting the concrete at the concourse spaces above.



# THE 'K' - CURRENT STATE



## Canopy Steel & Light Towers



- Steel rusting and cracking of concrete support pedestals.
- At the outfield light towers, overall rusting throughout is evident on the outside and water can ingress from the open top (used for access to the lighting catwalk), which collects inside at the base and is rusting the base steel from inside out.



# THE 'K' - CURRENT STATE



## Upper Deck Front Tubs



- Inadequate drainage and ASR corrosion.
- Numerous ASR related repairs performed with the 2007-2009 renovation. There is evidence of additional issues since that time.
- Will need to replace for extended life expectancy.





# THE 'K' - CURRENT STATE



## Stadium Chilled Water System



- The main stadium cooling loads are primarily served by an air-cooled chiller plant located in an MEP yard south of the stadium.
- The plant consists of (2) 500T chillers and (1) 200T chiller. The larger chillers are 13 years old and nearing the end of their expected life (15-20 years).
- The smaller chiller is from the pre-2009 renovation and is well past its expected life.
- Replacement of all (3) chillers is imminent and would include replacement of the chilled water piping from the chillers to the stadium.



# THE 'K' - CURRENT STATE



## Stadium Heating System



- The majority of the conditioned stadium spaces are heated with electric heat via indoor AHUs or rooftop units (RTUs) with electric heating coils.
- Generally considered a good first-cost solution but is a long-term higher utility cost without other means of site-generated power (e.g. solar panels).
- Energy generation and conservation measures are typically implemented in a new building (or major renovation) to maximize system efficiency and to minimize the annual operational costs.



# THE 'K' - CURRENT STATE



## Electrical Distribution System



- Service life of the major electrical distribution equipment and circuit breakers will expire by the end of this decade (requiring replacement of the gear and components at that time).
- Current system is deficient in service redundancy and reliability compared to modern MLB facilities, requiring additional unit substations and electrical services. Space required to upgrade is not available on the Service Level.
- The distribution system at the fountains is in more immediate need of replacement due to its environment and age of equipment.



# REVIEW OF ASSESSMENT

## A few major takeaways

- The lower seating bowl has outlived its useful life - both physically and functionally.
- The canopy and major concourse areas require a tear down + rebuild to meet long-term fan amenities and provide a viable structural system.
- The age of the building systems and outdated technology will force replacement of major mechanical, plumbing and electrical systems as their service life expires.



# REVIEW OF ASSESSMENT



## Program Document

Created a desired program with the Royals that identifies the future needs of the team and its fans



## Cost Difference

Renovation Cost Estimate:  
**\$1.072 billion**  
New Ballpark Cost Estimate:  
**\$1.005 billion**



## Schedule Impact

A renovation scheme would take 2 years longer (up to 4 years) due to phased construction sequence

