Mitchell Park Domes
Future State Planning and Construction Cost Estimating

Mitchell Park Domes
524 South Layton Boulevard
Milwaukee, WI 53215

MKE CTY Project #: P076501

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Project Summary

I. Project Purpose

The Concord Group was commissioned by Milwaukee County to provide professional consulting services to complete select planning, develop construction cost estimating, project feasibility budget, life cycle cost analysis, and conceptual architectural and engineering evaluations associated with a total of four (4) construction alternatives for the Mitchell Park Domes located at 524 South Layton Boulevard, Milwaukee, WI 53215. The project alternatives were developed in the initial RFP process by Milwaukee County, and further defined by the Consultant Team and County Parks during the study. The alternatives studied are as follows:

A. Alternative 1 – Demolish all Domes
B. Alternative 2 – Repair Three Domes
C. Alternative 3 – Restore Three Domes
D. Alternative 4 – Restore One Dome, Build New Conservatory/Event Center, and New Entry Courtyard

II. Project Team and Expertise

The Concord Group (Concord) Team consists of a group of specialized consultants with expertise in the areas of Project Management, Cost Estimating, Construction Management, Architecture, Landscape Architecture and Urban Planning, and engineering disciplines associated with Structural, Mechanical, Electrical, Plumbing, and Civil Engineering. The Team's qualifications were strategically chosen for this project to evaluate previous studies, assess current conditions associated with the resulting prioritized initiatives, and develop updated cost estimates, probable project feasibility budgets, and life cycle cost analyses for the four alternatives. The members of the Team and their roles for this project are as follows:

- **Concord** – Project Management, Cost Estimating, Life Cycle Cost Analysis, and Construction Management
- **TKWA** – Architecture, Concept Space Planning, and Visualization
- **GRAEF-USA Inc.** – Urban Planning / Landscape Architecture, and engineering disciplines associated with Mechanical, Electrical, Plumbing and Civil Engineering
- **McEnroe Consulting Engineers** – Structural Engineering

III. Project Background

Throughout its existence, the Mitchell Park Domes has been viewed as a cherished icon serving not only Milwaukee County residents, but global tourists that travel to the area. The

Domes, comprised of three (3) horticultural conservatory ecosystems, is an impactful and valuable resource for the community where the stunning exterior of the unique glass and concrete framed facility has classified the structure as a “one of a kind” landmark attraction. However, it is this same conical-series structure, coupled with the facility’s age and deferred maintenance, which has placed the building in a state of disrepair that either requires substantial repair or replacement to protect the Conservancy’s plant collection and visitor experience.

The Domes have undergone a series of past studies and planning efforts over the course of two plus decades. In addition, Milwaukee County Parks was assigned operations responsibility in 2016 when falling concrete temporarily caused the facility to close and have since embarked on several planning efforts during that span. These studies, over the course of multiple changes to construction cost fluctuations, have resulted in a wealth of professional consultant knowledge that needs to be re-evaluated and vetted with updated cost information to align with today’s economic conditions. The results will provide Milwaukee County with the ability to make a cost-conscious decision to move forward with a potential project strategy.

IV. Data Collection and Analysis

As noted previously, substantial research and documented data has been completed previously in a series of studies on the Domes over the last couple of decades. The studies had multiple initiatives that encompassed a wide array of evaluation and needed to be sifted through, data assessed, and ultimately prioritized, with the principal initiatives used from the reports and validated with site visit confirmation. This information was used as a focal point to establish the Construction Cost Estimates, Project Feasibility Budgets, and Life Cycle Cost Analyses for the Alternatives developed for this study and to align these costs in a comparative project timeline.

A. Previous Studies that were researched for this study were as follows:
   1. Milwaukee CTY Parks, A&E, and Domes Task Force Planning Documents (2016-2019)
   2. Engberg Anderson – Mitchell Park Master Plan (2000)
   3. GRAEF – Show Dome Façade and Lower-Level Façade Study (2008)
   4. GRAEF – Mitchell Park Horticultural Conservatory (2016)
   5. GRAEF – Framework for the Long-Term Strategic Planning of the Mitchell Park Horticultural conservatory (2017)
   6. ConsultEcon, HGA – Mitchell Park Horticultural Conservatory Future Path and Feasibility Study (2018)
   7. ArtsMarket, Engberg Anderson – Re-envisioning Mitchell Park and its Domes for the Next 50 Years (2019)

8. ZS LLC – Mitchell Park Conservatory Domes Glazing System Investigation Task 1 (2019) and Task 2 (2023) Reports

B. Alternatives Identification and Scope Development

The Team and County Parks collaborated on identifying what areas of the Domes building would be evaluated in conjunction with the Alternatives established for the study. The summary of Alternatives are as follows:

- **Alternative 1: Demolish the Domes within Defined Limits**

  Demolition of the 3 Domes, Transition House, Lobby and Entrance Structure, building and mechanical systems, all site improvements depicted in a determined area of limits, capping and abandoning utilities at the same demarcation limits. The demolition area will be restored utilizing turf grass to a stabilized final state and no other improvements planned for this option.

- **Alternative 2: Repair All 3 Domes**

  Repair of concrete structures, replacement of broken glass panes, sealing/caulking glass panes, critical building mechanical system upgrades (boilers/heaters, electrical, plumbing systems), building façade repairs, building modernization, Show Dome LED light system replacement, Wi-Fi connectivity, communication upgrades to PA system/lobby, security, “back of house” improvements, and ADA compliance upgrades.

- **Alternative 3: Restore All 3 Domes and Common Areas**

  The same evaluations were performed as noted in Alternative 2, **except** the areas identified as repair of concrete structures, replacement of broken glass panes, and sealing/caulking glass panes will instead be evaluated to restore the 3 Domes in accordance with the ZS LLC report titled *Mitchell Park Conservatory Domes Glazing System Investigation – Task 1 (2019) and Task 2 (2023) Report*. Specifically, the work proposed for all 3 Domes will include: restoring the exterior glass structure, new glass panes and aluminum framing elements, and restoring the seal integrity and concrete structures with materials and procedures outlined in the ZS LLC report in addition with the same Scope work previously described for Alternative 2. In addition, there were several additional areas of improvement that will subsequently be needed because of code-related issues further necessitating the upgrades. These areas are fire separation issues between all 3 Domes and the common areas, additional exit path

openings, fire suppression system throughout the facility, and known ADA improvements to the bathrooms, Domes path system, and ticketing/entry area.

- **Alternative 4: Restore Tropical Dome/conservatory & New Event Building Base Construction Alternative**
  The Base Construction Alternative was developed in collaboration with County Parks and the Team to explore an initial concept and balanced approach to the future of the Mitchell Parks Domes. The consensus for this Alternative was developed over the course of multiple meetings/discussions and utilized with some guiding principles established from the ArtsMarket report – Re-envisioning Mitchell Park and its Domes for the Next 50 Years (2019).

  The thought process included concepts for a combination of proposed improvements that would "restore something old and construct something new" to better develop the Domes to the future Mitchell Park potential, thereby keeping some preservation of the Domes current appearance with a new highly sustainable building complex that provides program elements of the Show Dome and supports better revenue potential and visitor appeal. For planning and budget purposes, the new conservatory (two-story with southern open space view) and Event buildings will encompass a footprint of approximately 30,000 square feet (SF) and a floor area of approximately 40,000 SF, where the space will also include new entry, lobby, ticketing, office, gift shop, café, bathrooms, mechanical system space, and tunnel-entry to the restored Tropical Dome. The new mechanical system, upgraded with a sustainable new mechanical heating/ cooling, electrical, and plumbing systems to support the newly constructed facilities and the restored Tropical Dome.

  It should be noted that for Alternative 4, the other two Domes (Desert and Show Domes), Transition Dome, and support service/common areas within the existing structure will be temporarily "moth-balled" to allow time to either determine the future of those facilities and/or program the areas for future use in Mitchell Park. These current existing areas will be stabilized and remain operational in a temperate environment using current mechanical systems. However, the space will be for working purposes only and will not let the public enter and have allowed access. It has been assumed that this "mothballed" period would be approximately 5 to 10 years to allow time to program and budget next steps.

- **Alternative 4: Potential Additional Exterior Garden Area Improvements** The exterior garden area improvements immediately adjacent to the proposed new conservatory and Event buildings were evaluated in concept to be possible additional attractions and revenue generated amenities that the County may want to consider incorporating with the Base Construction Alternative 4 –Restore Tropical Dome/New conservatory & Event Building. The exterior garden areas have been identified as follows:
    - East Café Garden
    - East Wedding Garden
    - South Event Garden

C. Scope Document Summary and Site Visit Validation

As generally stated earlier, a scope document summary matrix was developed from a combination of previous studies review, site visit validation, and consensus of scope items that would be evaluated to prepare the construction cost estimate, project feasibility budget, and life cycle cost analyses for each alternative. A summary of the scope information is as follows:

Alternative 1: Demolition of the Domes

Description:

1. Scope Item: Demolish all 3 Domes, transition house, lobby and entrance structure and associated support facilities, building and mechanical systems, all site improvements such as utilities, circulation based on demolition limits aligned with the visualization limits shown on the exhibit on the following page.
    a. The red outline depicts demolition extent.
    b. Demolition of all utilities in limits and capped at border.
    c. Assumes all utilities only serve the Domes and do not serve other portions of the park.
    d. Utilities included within demolition limits are gas, electric, sewer, and water.
    e. An allowance was established for connection to existing Greenhouse structure to remain and an allowance for abandonment of the Generator fuel tank in the loading dock area behind the Transition House.
2. Scope Item: Restoration of site to turf grass within demolition limits.
    a. Includes costs for demolition, removal, suitable fill, grading, and seed restoration of entire demolition area.

b. All Stormwater Management assumes surface drainage and no new facilities.

Alternative 2: Repair of the Domes

Description:

1. Scope Item: Repair of the concrete structures of the 3 Domes
    a. Superstructure of Domes:
        1) Prepare concrete, grout, joints, and plates by removing loose material, corrosion, etc.
        2) Repair joints between precast concrete pieces. Based on reports available, 1/3rd of joints in show dome and desert dome are recommended and more in the tropical dome.
        3) Coat exposed steel plates at precast joints and hub connections to glazing system.
        4) Access assumptions:
            i. All sides of each concrete piece accessed from lifts on the interior.
            ii. Temporarily remove or adjust the wire mesh system to gain access to the necessary repairs. Wire mesh must remain in final condition to catch glass.
    b. Foundation repairs:
        1) Chip, clean, prime & patch type of typical concrete restoration work
        2) Coat interior surface of foundations with a breathable coating
2. Scope Item: Replacement of broken glass panes of the 3 Domes
    a. Remove existing broken ¼" wired glass panes and replace with new 7/16" laminated glass with low emissivity coating.
    b. Install new aluminum extrusion onto existing aluminum frame at edge of new glass.
    c. Install silicone sealant to support new glass as well as sealant to create transition to adjacent old glass.
    d. Install new exterior aluminum pressure plates and hub covers.

    Note that the wire mesh on the interior of each dome should stay in place for this Alternative because when the existing wired glass panes break, the mesh helps to keep the glass from falling into the public space below.
3. Scope Item: Sealing/Caulking glass panes

a. Remove any old sealant and clean surfaces.
b. Seal around perimeter of glass panels with silicone sealant. Assuming that this works, it would be performed at the same time as replacing cracked glass panels, so additional sealant would be needed to address cracking.
c. Clean drain system at each hub to allow drainage.

*** It should be noted that this approach is not recommended. Based on previous attempts to implement this approach, the sealant will not hold, and leaks will occur very quickly after implementation. ***

4. Scope Item: Critical building mechanical system upgrades (boilers and heat, electrical, plumbing)

a. Provide critical building mechanical system upgrades in order to provide more appropriate and modern HVAC and plumbing systems.
b. HVAC modifications to include demolition and purchase of new equipment to replace in kind:
    1) Existing boilers, pumps, tanks, associated controls within boiler plant.
    2) Air handling units, steam coils, louvers, dampers, and ductwork serving domes.
    3) Wall exhaust fans and dome exhaust fans, associated louvers, and dampers.
    4) Air intakes and associated louvers and dampers.

5. Scope Item: Building façade repairs.

This scope of work is intended to address repairs needed below the bottom of the Domes glass systems. It includes screens and precast at the base of the domes, but not the primary glass system of each dome. It also includes the other precast and brick facades of non-Dome areas.

a. Concrete repairs on lower level of Desert Dome

    1) Replace sealant joints between panels.
    2) Repair spalled stone and mortar areas of panels.
    3) Investigate the condition of the panels end below grade. If needed, perform the following work:
        a) Remove pavement below, and in front of, the panels that end below grade to install the new angles. Reconfigure the pavement to provide drainage space below the base angles.
        b) Add weep holes where needed in panels.
        c) Create a drainage trough below the base angles by reworking the concrete curb and soil.

4) Clean and paint concrete loading dock.

b. Brick Façade Repairs on north side of Transition Dome

1) Repoint all cracked and deteriorated areas of brick.
2) Stabilize all brick areas with helical ties through the face of the brick.
3) Replace all severely deteriorated support angles with new galvanized or stainless steel angles bolted to wall. Include flashing and weeps when rebuilding the base of the wall.
4) Replace all steel lintels with new galvanized steel lintels.
5) Replace all sealant joints within masonry, concrete, windows and doors.
6) Add flashing to the top of the wall.
7) Replace deteriorated concrete window and door jambs with new precast pieces. Also replace deteriorated concrete pieces between brick panels on Transition Dome.

c. Brick Façade Repairs at North Loading Dock areas

1) Repoint cracked and deteriorated areas of brick.
2) Clean and paint exposed portions of steel lintels at overhead doors.
3) Replace all sealant joints.
4) Replace deteriorated hollow metal doors.

d. Repairs at Bases of 3 Domes and Entryway

1) At entryway, clean and paint embedded vertical steel elements.
2) At each dome:
   a) Replace damaged screens.
   b) Repair concrete spalls in precast concrete around louvers.
   c) Replace all sealant joints.
   d) Repair stone sills at louvers as needed.
   e) Replace waterproofing membrane in drain gutters.

6. Scope Item: Building modernization

a. Provide a new fire alarm voice evacuation system design for voice intelligibility. Code driven; this system will provide complete speaker/strobe coverage in the event of a fire.
b. This this system can also be used by the owner to page and relay messages and play background music if so desired. Once a fire alarm device is triggered those systems cut out and the fire alarm message takes over.

7. Scope Item: Show Dome LED light system replacement

a. Replace entire system; lights, and backbone software controlling lights. The current system is approximately 27-years old.
b. Update Pharos Lighting Controls Software to a new version or simplify it with a new control that could be managed by staff.
c. Verify all wiring in place has not deteriorated.

8. Scope Item: Wi-Fi connectivity

a. Provide Fiber from roadway into building's main IT/Data closet (MDF).
b. Upgrade all low-voltage data cables to cat 6 or 6a (copper).
c. Provide new data racks spaced no more than 290' apart for further distribution within facility.
d. Provide wireless access points (WAP's) to provide full coverage in all areas.

9. Scope Item: Building comms (PA system, lobby enhancements)

a. Provide a new PA system for complex.
b. New recessed, surface, and pendant mounted speakers would be required.
c. Speakers must be placed in a layout meeting a 2 to 1 spacing, twice the ceiling height.
d. A sound or Acoustical engineer must be included in to verify complete coverage for voice and communication intelligentially.

10. Scope Item: Security

a. Provide card access at all exterior doors, IT data Closets, Mechanical/Electrical areas and other offices deemed necessary.
b. Provide security cameras in all areas of the facility, including back of house and key exterior locations.
c. Current security measures in place include very few horn/strobes, simple keypad tie into the Greenhouse. The system is monitored by a third party off-site.

11. Scope Item: Needed repairs to "back of the house" facilities.

a. Replace membrane over basement/mechanical area with new pedestrian grade membrane.
b. Replace metal roof deck in area between loading dock and transition house.
c. Rebuild portions of CMU and brick wall in area between loading dock and transition house.
d. Replace all rusted and decayed conduit with new. Provide PVC conduit in locations deemed necessary. Verify all copper wiring is intact from rusted conduit openings.

e. Provide a one for one replacement of lighting fixtures using new LED fixtures. Utilize existing wiring and junction box locations.
f. Add new exterior building mounted or pole mounted lights near exits to meet code required egress lighting levels.
g. Provide new exits and update the path of egress lighting levels to meet current code.
h. Provide code required occupancy, vacancy, and daylight sensors.
i. Provide new room by room dimming controls.
j. Add additional outlets and circuitry for new equipment.

12. Scope Item: ADA compliance upgrades

a. This ADA compliance analysis conforms to the International Existing Building Code (IEBC) 2015 and the American National Standard A117.1 – 2009, as mandated by the State of Wisconsin. An analysis to assess if the existing buildings are ADA compliant was undertaken by GRAEF in 2016 and was done partially by reviewing construction drawings and field verifications. The current scope of work is to provide updated recommendations based on the previously completed study. No updated accessibility analysis was performed for this project.
b. The degree to which accessible improvements are required is ultimately at the interpretation of the authority having jurisdiction based on the degree of improvements/modifications to the Domes or supporting structures. It is assumed that in either Option 2 or Option 3, the scope of work may be significant enough to require the following accessible improvements. Additionally, Milwaukee County Parks may voluntarily make improvements to provide a universally accessible experience for all visitors.
c. The following list was provided in the 2016 GRAEF analysis of items requiring improvements in toilet room accessibility.

1) Toilet Rooms:
   i. Bottom surface of mirrors is above 40” AFF
   ii. Path to stall is not 42” min (40” measured on site)
   iii. 18” clear wall space not provided at Men’s toilet room door pull side
   iv. Apron below sinks does not meet 29” clear

2) Ticket Booth:
   i. Transaction surface is too high (54” AFF)
   ii. No accessible route within ticket booth for disabled employees/staff

iii. Location of ticket booth creates a cramped entry experience that is challenging to navigate in a wheelchair
iv. The design and location of the ticket booth is the root cause of accessibility issues, thus our recommendation is to demolish the existing ticket booth and build a new ticketing space.

Alternative 3: Restore the Domes and Common Areas

Description: It should be understood that the following Scope Items in some instances are the same effort as previously described under Alternative 2 work when noted or includes additional Scope Item that are specifically described for Alternative 3 and have differences in construction cost estimates for the proposed work effort.

1. Scope Item: Repair and repair/seal the concrete structures of the 3 Domes (combined Scope Items for cost estimates because of joint work performed).

    a. Superstructure of Domes:
        1) Remove the wire mesh system in all domes.
        2) Clean all concrete to remove biological growth, dirt, and loose paint.
        3) Prepare concrete, grout, joints, and plates.
        4) Repair joints between precast concrete pieces. Based on reports available, 1/3rd of joints in show dome and desert dome are recommended and more in the tropical dome.
        5) Coat exposed steel plates at precast joints and hub connections to glazing system.
        6) Coat concrete with 2 coats of an epoxy coating system
        7) Access assumptions: Three sides of each concrete piece accessed from lifts on the interior, exterior side accessed during glazing replacement.

    b. Foundation repairs:
        1) Chip, clean, prime & patch type of typical concrete restoration work
        2) Coat interior surface of foundations with a breathable coating

2. Scope Item: Rebuilding the exterior glass structures of the 3 Domes and install new glass panes and aluminum framing elements in accordance with the ZS LLC studies (combined Scope Items for cost estimates because of joint work performed).

    a. Replace all original glass with new 7/16” laminated glass with low emissivity coating.
    b. Install new aluminum extrusion onto existing aluminum frame.
    c. Install new exterior flush structural silicone joint.

d. Remove all exterior hub covers and pressure plates.
e. Install new redesigned hub cover plates.
f. Install new aesthetic/non-functional pressure plates.
g. Clean all hub bodies.
h. Install new redesigned interior gaskets.

3. Scope Item: Sealing/Caulking glass panes included in combined Alternative 3 – Scope Item 2.

4. Scope Item: Critical building mechanical system upgrades (boilers and heat, electrical, plumbing). Includes same proposed work described in Alternative 2.

5. Scope Item: Building façade repairs that include added items required for Alternative 3 that are beyond those described for Alternative 2.

   a. Concrete repairs on the lower level of Desert Dome.
      1) Clean all precast panels.
      2) Replace deteriorated steel base angles with new galvanized or stainless steel angles.

   b. Brick façade repairs on north side of Transition Dome
      1) Clean entire façade.

   c. Brick façade repairs at the North Loading Dock areas.
      1) Replace deteriorated concrete window and door jambs with new galvanized or stainless steel angles bolted to wall. Include flashing and weeps when rebuilding the base of the wall.

   d. Repairs at Bases of 3 Domes and Entryway
      3) At the dome:
         a) Provide weather-resistant protection for concrete at drain locations from new glazing system. This may include new sheet metal or a coating of some sort.

6. Scope Item: Building modernization.

   a. The scope suggested for this improvement is based upon the Code and ADA Compliance Report performed by GRAEF in 2016.
   b. Two of the primary elements of non-compliance noted in GRAEF's report are the lack of a fire separation between the lobby and the Domes and too great a distance to an exit door from within the Domes.
   c. Fire suppression throughout the Domes was not assumed as part of the GRAEF 2016 analysis but is included in this scope document. We assume that Alternative 3 will constitute a Level 3 Alteration as defined by IEBC (over

50% of the space is remodeled or reconfigured). A Level 3 alteration will most likely include a full fire suppression system for the building.

7. Scope Item: Show Dome LED light system replacement. Includes same proposed work described in Alternative 2.
8. Scope Item: Wi-Fi connectivity. Includes same proposed work described in Alternative 2.
9. Scope Item: Building comms (PA system, lobby enhancements). Includes same proposed work described in Alternative 2.
10. Scope Item: Security. Includes same proposed work described in Alternative 2.
11. Scope Item: Needed repairs to "back of the house" facilities. Includes same proposed work described in Alternative 2.
12. Scope Item: ADA compliance upgrades for the ticket booth and bathroom will similarly be included for Alternative 3. Also, upgrades to the Pathway system in each of the Domes has been added for Alternative 3, as follows:

    a. The ADA compliance analysis conforms to the International Existing Building Code (IBC) 2015 and the American National Standard A117.1 – 2009, as mandated by the State of Wisconsin.
    b. The degree to which accessible improvements are required is ultimately at the interpretation of the authority having jurisdiction. Further programming will be necessary, but it is assumed that in Alternative 3 the scope of work may be significant enough to require the following accessible improvements. In addition, Milwaukee County Parks may voluntarily make improvements to provide a universally pleasant experience for visitors of all abilities.
    c. The Tropical and Desert Domes have the most noticeable change in grade throughout the paths and is observed to be greater than 1:12 (maximum compliant slope). The Show Dome was observed to be possibly compliant in slope but requires the addition of handrails along both sides of the sloped portions of the paths.
    d. For the purposes of conceptual budget pricing, this report will assume that a new elevated boardwalk will be installed along all existing dome pathways. Further programming and study will be needed for final design.
    e. It is noted, the interface between the elevated boardwalk and machinery or equipment entering from the loading dock has not been studied in this report.

Alternative 4: Restore Tropical Dome/Conservatory & New Event Building

Description: Base Construction Cost Alternative

1. Scope Item: Restore One Dome (Tropical Dome). Includes same proposed work described in Alternative 3 directly associated with the Dome structure previously evaluated, where applicable structural improvements and applicable Scope items are prorated accordingly. As previously stated, the Restore One Dome option does not include any costs associated to the existing System improvements, as this option will receive a new sustainable Mechanical System as part of the new Conservatory and Event Buildings and the other two domes will be temporarily "moth-balled."

2. Scope Item: Build a new Conservatory and Event Building.

    a. The new, highly sustainable Conservatory and Event building will serve several purposes:

        1) New landscaped North Entry Courtyard sized to accommodate equipment operations to the east greenhouse areas.
        2) Provide a new Conservatory Space for the programmatic elements that currently occur in the "Show Dome".
        3) Provide a new area for event rental. The current "Greenhouse No. 7" is not appropriate for all events (as a functioning greenhouse – it is often too warm for certain events). The new event area would function better for weddings, catered events, etc. Capacity: Approximately 400 occupants
        4) Provide a new, secured entry with welcoming lobby space – fully accessible – that provides ticketing for the new building, Dome, offices, and common/café areas.
        5) Tunneled corridor for entry into the restored Dome.
        6) New mechanical and storage areas will be located below grade – assume all new mechanical systems to support the new building and the existing Tropical Dome. See Item 3 below.

    b. Considerations for budget purposes: Quantities/Scale:

        1) 30,000sf footprint (40,000sf total floor area)
        2) Type IIB Construction, Steel structural system on concrete footings (no geotechnical information available to inform deep foundations)
        3) Toilet facilities appropriately sized for occupancy, use and space associated with restored dome and new building area.

3. Scope Item: New Mechanical and Electrical Systems for Restored Dome/Conservatory & Event Building

Alternative 4: Potential Exterior Garden Area Improvements

Description:

a. For the purposes of this scoping exercise, the site plan created by Saiki Design as part of the 2019 ArtsMarket Report will be used for pricing.
b. The Welcome Center shown as part of the 2019 ArtsMarket Report should not be included in this updated pricing exercise. A separate scope document will be provided that suggests a new greenhouse building.
c. North Entry Courtyard
    1) Provide concrete paved courtyard with decorative score pattern for area directly north of new Conservatory greenhouse addition.
    2) Accessible walkways shall be added to connect pedestrian traffic from the drop off and parking lots to the west and continue through the entry courtyard to the Park area to the east.
    3) This area will also provide limited truck access to the existing loading dock adjacent to the event greenhouse on the east.
    4) Greenspace areas will be defined by landscape garden areas with planting of shade and ornamental trees, shrubs, perennials, ornamental grasses where appropriate to provide all year interest.
    5) Site amenities shall include benches, waste receptacles.

d. East Wedding Garden
    1) The garden area as identified in the Saiki Design cost estimate from the Arts Market Report would remain as a proposed green space with slight modifications to the design based on the proposed Conservatory greenhouse addition footprint.
    2) This garden would also serve the new café, noted as Café Garden in the cost estimate. The area is predominantly decorative hard surface landscaping enhancements immediately east of the new Conservatory and includes the addition of an outdoor seating area.
    3) The rest of the garden can serve as an interactive learning space for visiting patrons and students providing an additional pedestrian connection to Mitchell Park to the east.

e. South Event Garden
    1) Provide decorative paver terrace directly adjacent to the southern event space.
    2) The terrace area should be large enough to accommodate 150 people.
    3) Additional garden paths connecting to other areas of the garden shall be concrete paving to provide ADA access to all areas.
    4) A small water feature is centered near the back of the terrace providing a backdrop to the garden area.

5) All other areas adjacent to terrace and walkways shall be planted with trees, shrubs, perennials, grasses providing year-round interest.

V. Cost Summary of Alternatives

A. Domes Alternatives 1 – 4 Visualizations

In collaboration with County Parks, the Concord Team developed visualizations to conceptualize the results of the respective versions. The visualizations for each Alternative with select scope information can be found in Appendix A.

B. Construction Cost Estimate for Alternatives 1 – 4

In accordance with information provided in previous studies, the Scope Document development, site visit validation, and discussions amongst the County Parks and Team, a series of Construction Cost Estimates were developed for the selected Alternatives for this study, The complete Construction Cost Estimate Report that details the inclusion and exclusions made to develop the cost evaluation can be found in Appendix B and are summarized in the table below:

Construction Cost Estimate by Alternatives:

Item Description:	Cost Estimate (OM):
Alternative 1 – Demolition of the Domes	$ 4,778,881
Alternative 2 – Repair 3 Domes	$ 21,720,595
Alternative 3 – Restore 3 Domes	$ 67,149,432
Alternative 4 – Restore Tropical Dome & New Conservatory / Event Building and North Entry	$ 49,746,000
Alternative 4 – Garden Area Improvements (Total) for Café, Wedding, and Event Gardens	$ 3,331,137

C. Project Feasibility Budget (PFB)

The Project Feasibility Budget (PFB) was prepared for each Alternative that further defines and establishes a suitable budget for the project. The PFB is the total projected costs needed to complete a project over a defined period of time. It's used to estimate what the costs of the project will be for every phase of the project. Creating a project budget is a critical part of the project planning process, especially where all these project alternatives are in a concept phase. The PFB is essentially a budget estimate

that includes all Contractor construction, Owner construction, Equipment (FFE), Design, and Administrative amounts, and with associated contingencies assigned to each. A complete breakdown of the PFB costs for each Alternative are provided in Appendix C and are summarized in the following tables:

PFB Alternative 1 – Demolition of the Domes

Item Description:	PFB Cost ($)
Contractor Construction	$ 5,017,825
Owner Construction	$ 550,891
Equipment (FFE)	$ 0
Design	$ 208,768
Administration Costs	$ 325,592
Owner Contingency (5%)	$ 305,153
GRAND TOTAL	$ 6,408,230

PFB Alternative 2 – Repair 3 Domes

Item Description:	PFB Cost ($)
Contractor Construction	$ 22,806,625
Owner Construction	$ 1,190,331
Equipment (FFE)	$ 0
Design	$ 2,829,665
Administration Costs	$ 873,921
Owner Contingency (5%)	$ 1,385,027
GRAND TOTAL	$ 29,085,569

PFB Alternative 3 – Restore 3 Domes

Item Description:	PFB Cost ($)
Contractor Construction	$ 73,864,375

Owner Construction	$ 3,793,219
Equipment (FFE)	$ 0
Design	$ 7,098,868
Administration Costs	$ 2,053,152
Owner Contingency (5%)	$ 4,340,481
GRAND TOTAL	$ 91,150,095

PFB Alternative 4 – Restore Tropical Dome & New Conservatory / Event Building and North Entry

Item Description:	PFB Cost ($)
Contractor Construction	$ 52,233,303
Owner Construction	$ 2,611,665
Equipment (FFE)	$ 400,000
Design	$ 5,088,357
Administration Costs	$ 1,287,209
Owner Contingency (5%)	$ 3,081,027
GRAND TOTAL	$ 64,701,561

PFB Alternative 4 – Garden Area Improvements (Café, Wedding, Event Gardens)

Item Description:	PFB Cost ($)
Contractor Construction	$ 3,664,253
Owner Construction	$ 188,213
Equipment (FFE)	$ 50,000
Design	$ 443,771
Administration Costs	$ 169,099
Owner Contingency (5%)	$ 225,767
GRAND TOTAL	$ 4,741,102

D. Life Cycle Cost Analysis (LCCA) – Total 20-year Period with Inflation Adjustments

The Life Cycle Cost Analysis was developed based on the elements of ownership for an operating facility over an assumed 20-year period. These total costs over that period were adjusted for inflation and were tabulated for Alternatives 2 – 4. It is understood that Alternative 1 does not have a LCCA total value because the Domes are assumed to be demolished. A complete Report breakdown of the LCCA costs for each Alternative 2 – 4 are provided in Appendix D and are summarized in the following tables:

Life Cycle Cost Analysis (LCCA) Summary by Alternatives – 20 Year Projection Total with inflation:

Item Description:	LCCA Total :
Alternative 2 – Repair 3 Domes	$ 30,151,870
Alternative 3 – Restore 3 Domes	$ 11,487,519
Alternative 4 – Restore Tropical Dome & New Conservatory / Event Building and North Entry	$ 10,155,513
Alternative 4 – Garden Area Improvements (Total) for Café, Wedding, and Event Gardens	$ 998,897