

Pacific Science Center

Briefing for Landmarks Preservation Board

January XX, 2023



Pacific Science Center Feasibility Study - Team



Pacific
Science
Center



Schemata
Workshop
Architect



GGN
Landscape
Architect



Sellen
General
Contractor

Water Resources &
Building Services



MKA
Civil Engineer




Sazan Group
MEP




Biohabitats
Life Sustaining
Systems

Structural
Engineering



MKA
Structural
Engineer



IDE
Structural
Engineer



W/MBE Firms

Entitlements &
Costs



Studio
Pacifica
Accessibility



DCW
Cost
Management



David
Peterson
Historic
Preservation



Minoru Yamasaki & Associates,
design architects

Worthington, Skilling, Helle &
Jackson, structural engineer
(Jack Christiansen)

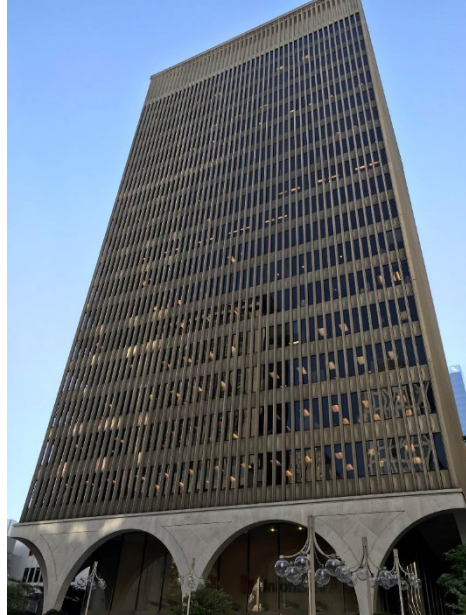
NBBJ, associated architect

Lawrence Halprin & Associates,
landscape architect

U.S. Science Pavilion, 1962 Seattle World's Fair



Reynolds Metals HQ (1958)



Seattle – IBM Building (1964)



Northwestern Life (1965)



World Trade Center NYC (1973)



Seattle – Rainier Tower (1977)

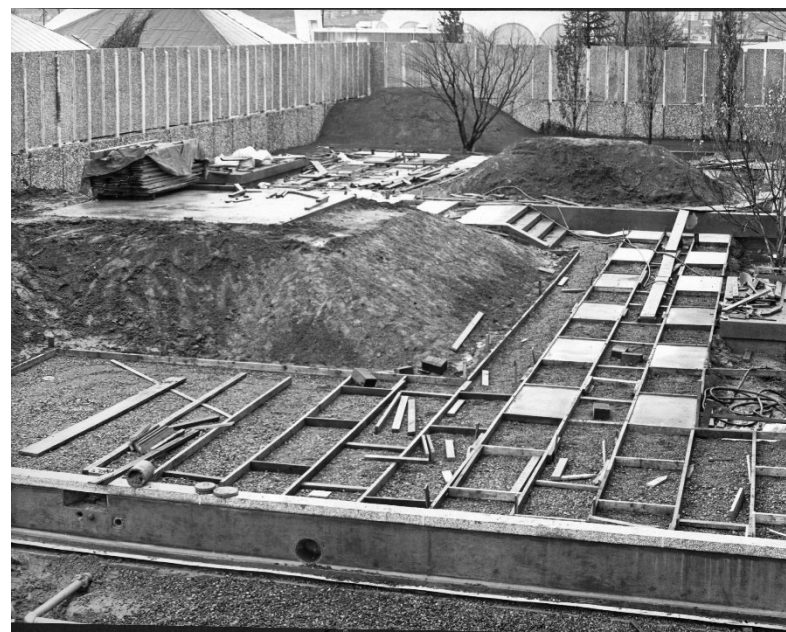
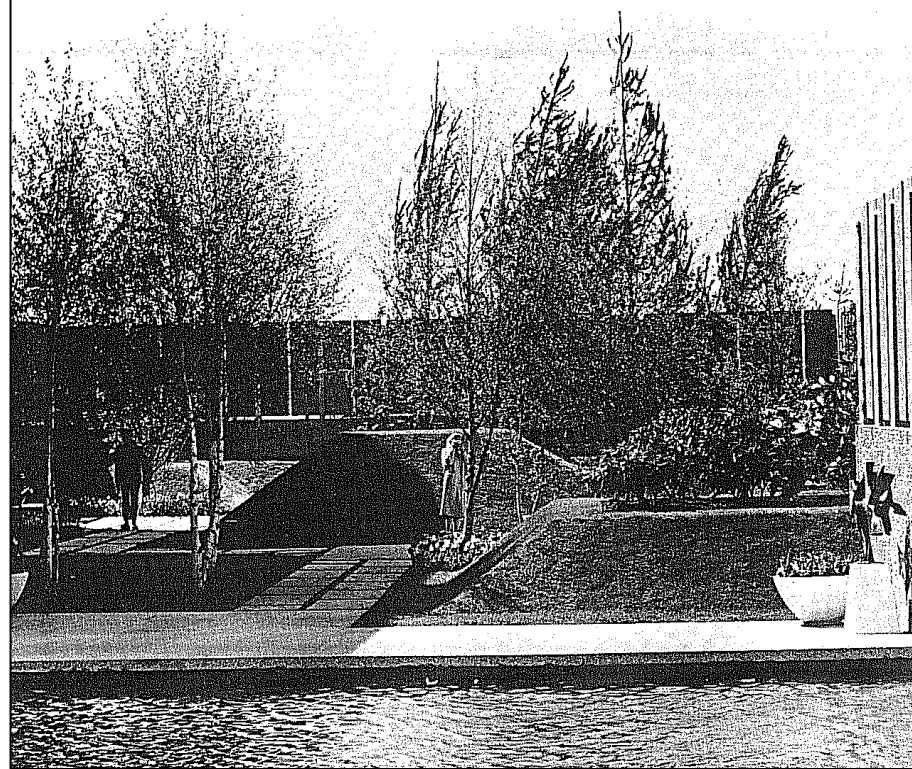
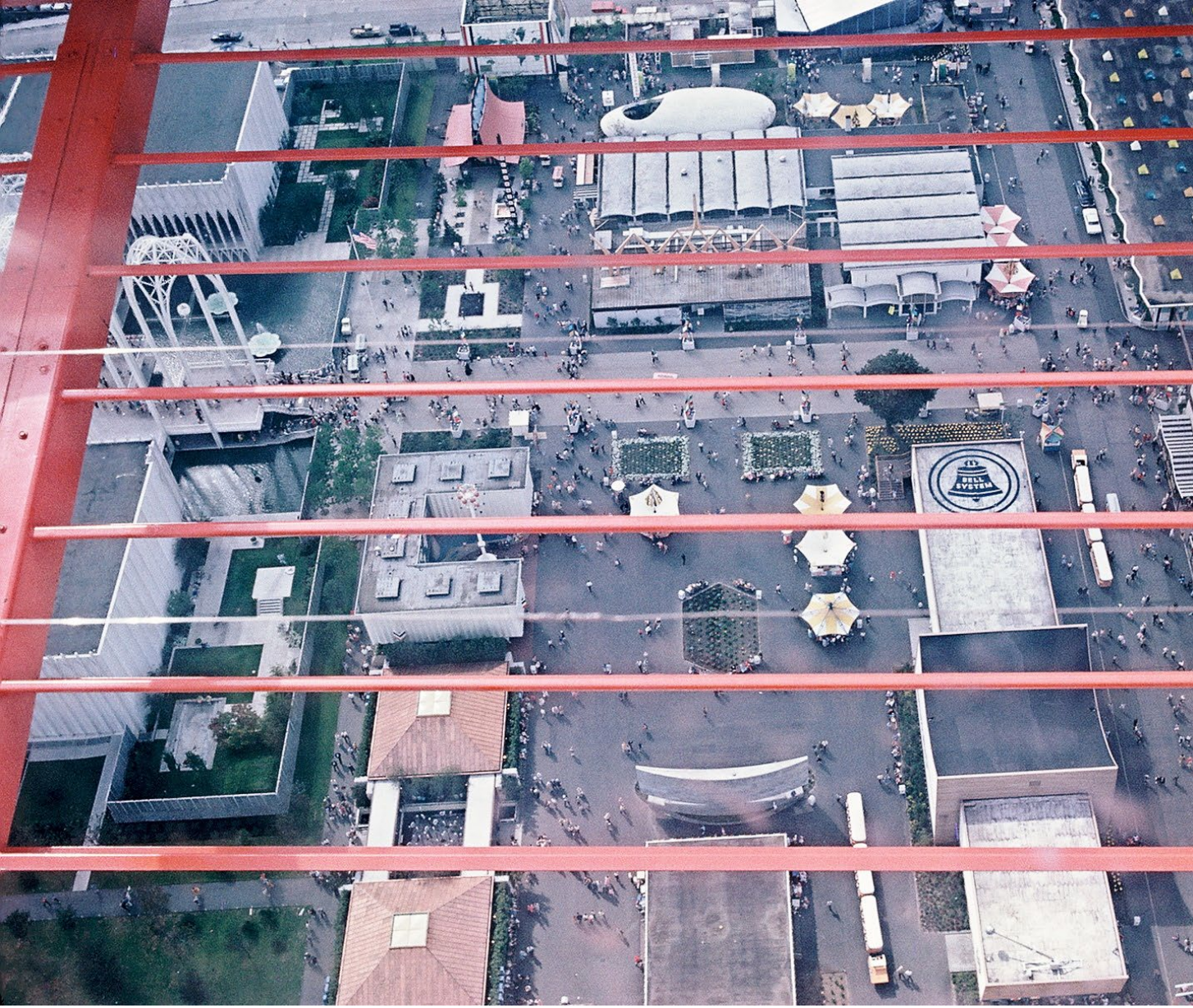
McGregor Conference Center, Wayne State University (1955-59)

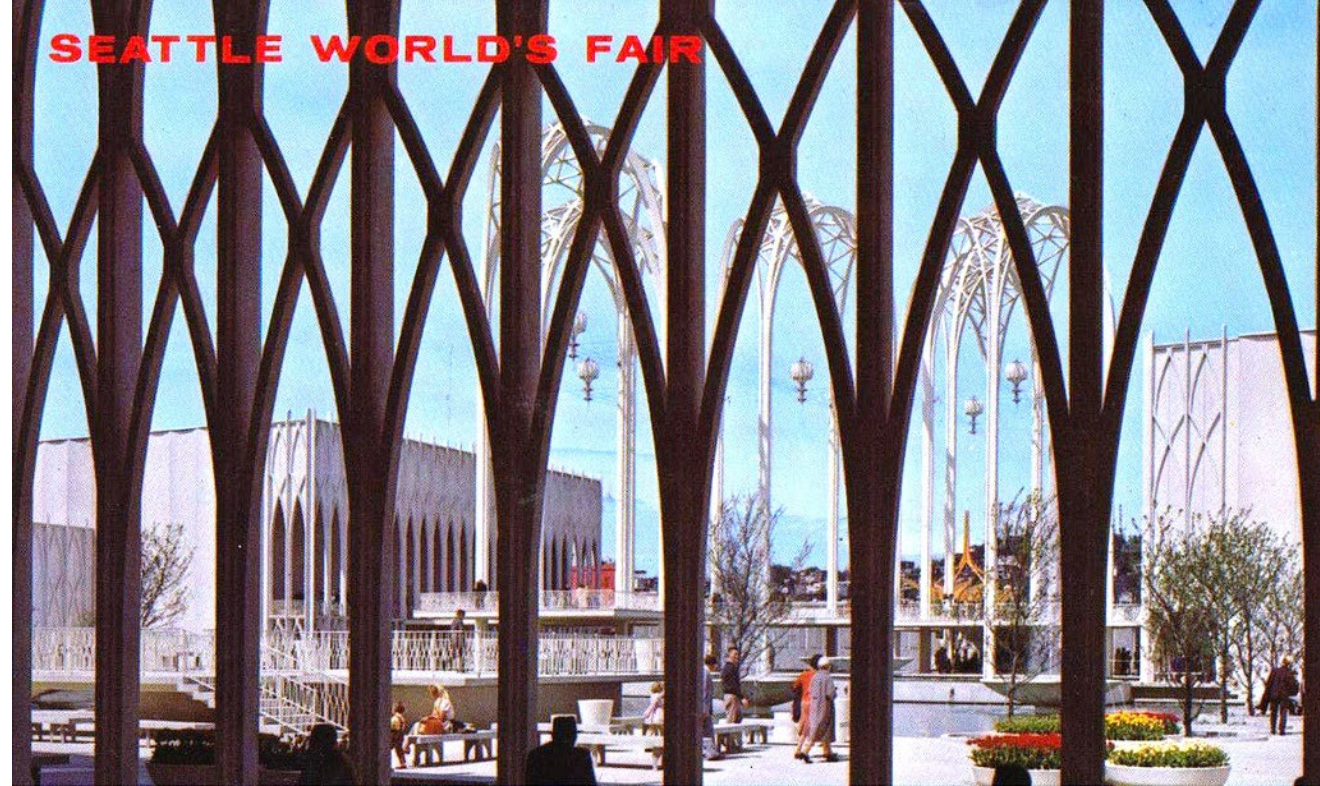


Oberlin College Conservatory of Music (1963)

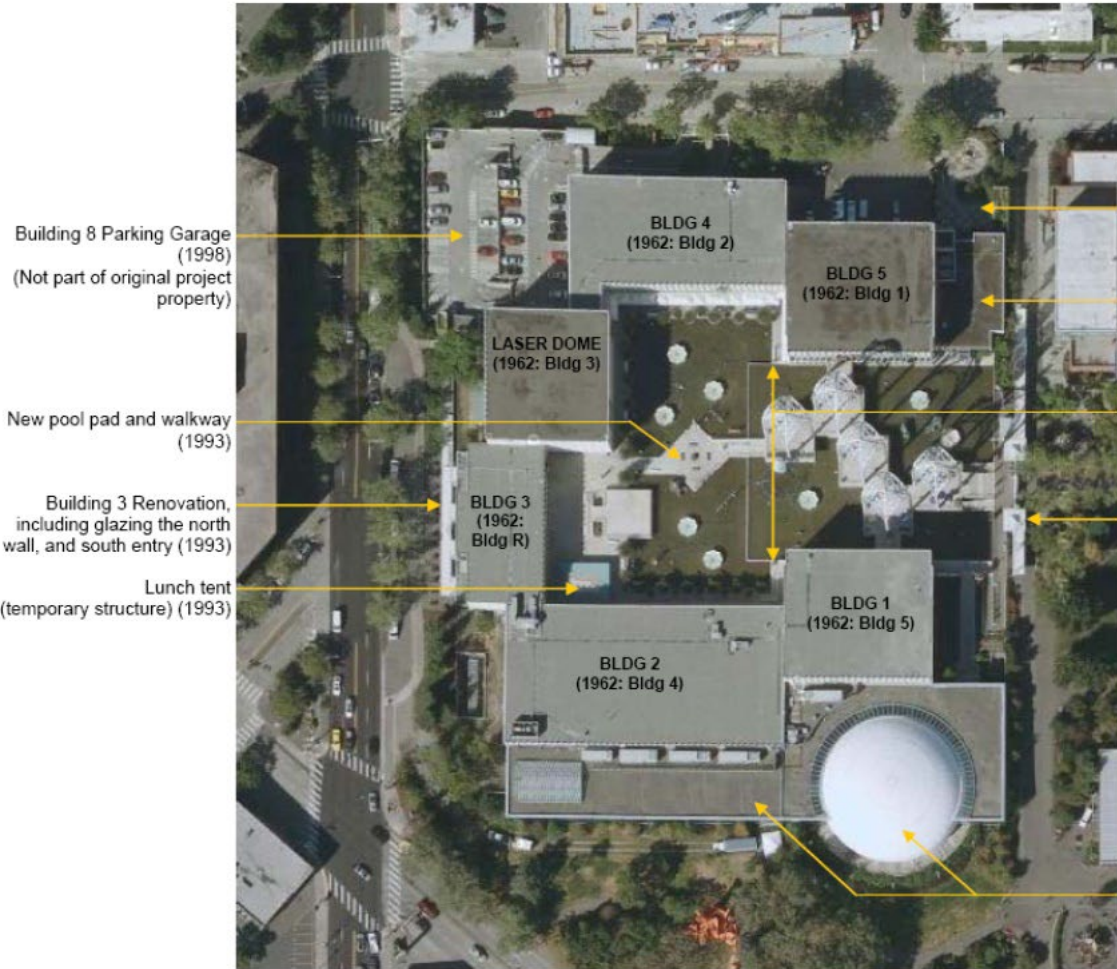








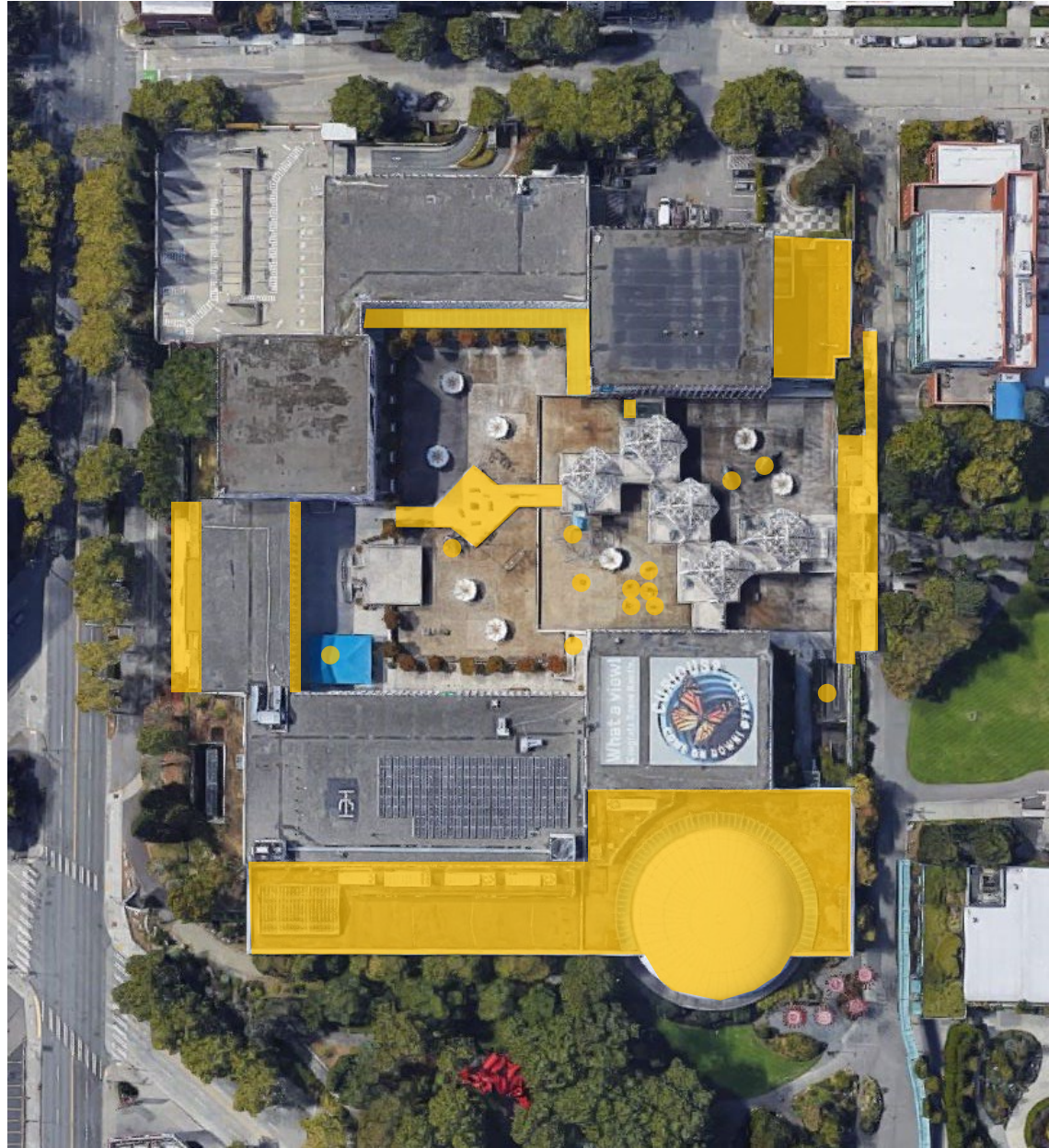
U.S. Science Pavilion, 1962 Seattle World's Fair
Pacific Science Center, 1963 - present

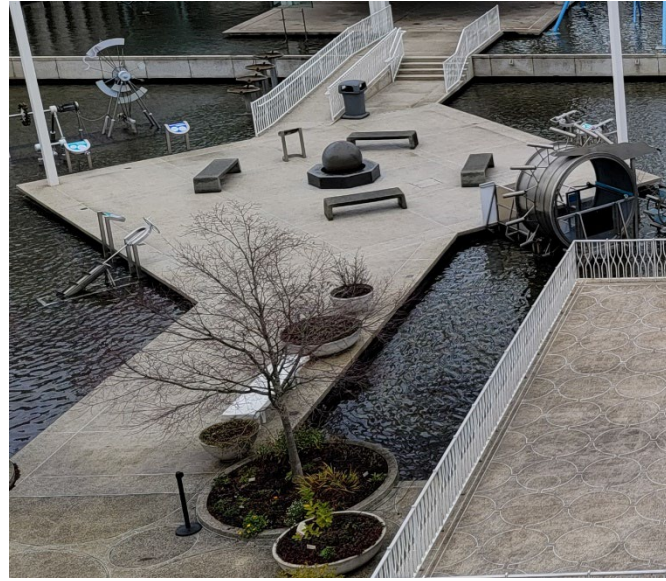


SITE, 2010

NON-HISTORIC ADDITIONS OR RENOVATIONS

- Parking expansion and west garden regrading (1993)
- Building 6A Discovery Labs (1996)
- Installation of barrier free ramps (1993)
- North Entrance Ticketing Kiosks and canopy (1993)
- Building 1A and 2A Boeing IMAX Theater and Exhibit Wing (1998)







Standards for Designation

- A. It is the location of, or is associated in a significant way with, a historic event with a significant effect upon the community, City, state, or nation; and
- B. It is associated in a significant way with the life of a person important in the history of the City, state or nation; and
- C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state, or nation; and
- D. It embodies the distinctive visible characteristics of an architectural style, period, or of a method of construction; and
- E. It is an outstanding work of its designer, Minoru Yamasaki, and its structural engineer, Jack Christiansen; and
- F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or the City.



Elements That Are Landmarked

- The site, including the entry towers, walkways and pools, excluding the non-original water features and displays, and excluding non-original sculpture and artwork.
- The exteriors of the buildings, excluding the following: the Seattle Rotary Discovery Labs Building (Building 6A), the Boeing IMAX Theater and Exhibit Wing, the north entry ticket kiosks, the temporary office trailer and the temporary lunch tent.
- The hemispherical projection dome (geodesic dome) of the Laser Dome Theater, including the original screen.
- The original curved walls of the interior of the theater in Building 5, including the curved walls of vertical tongue-in-groove wood paneling



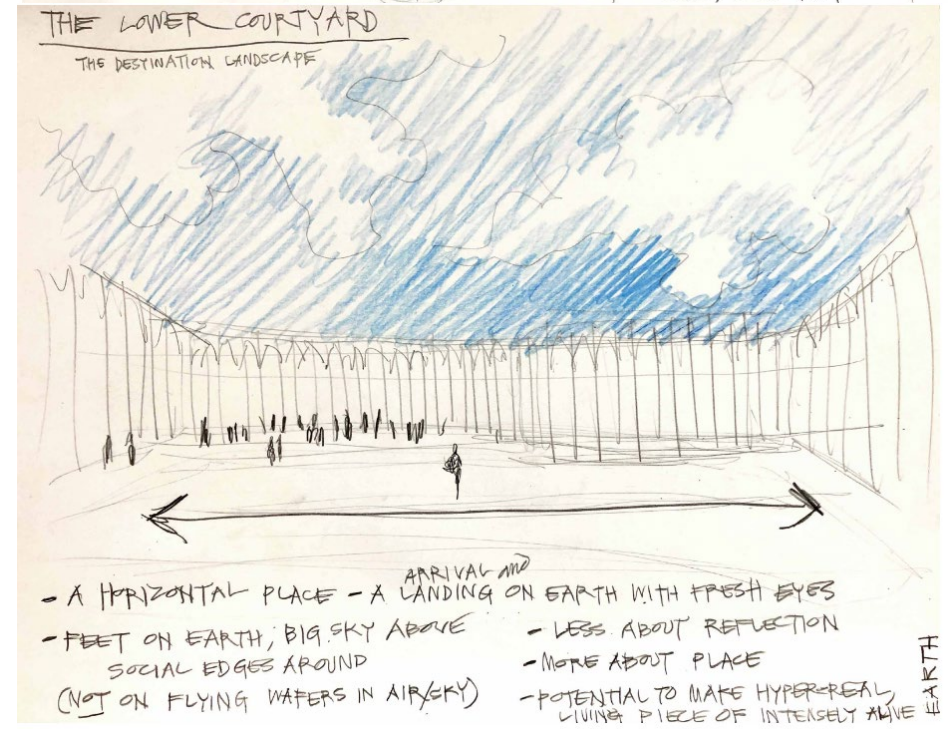
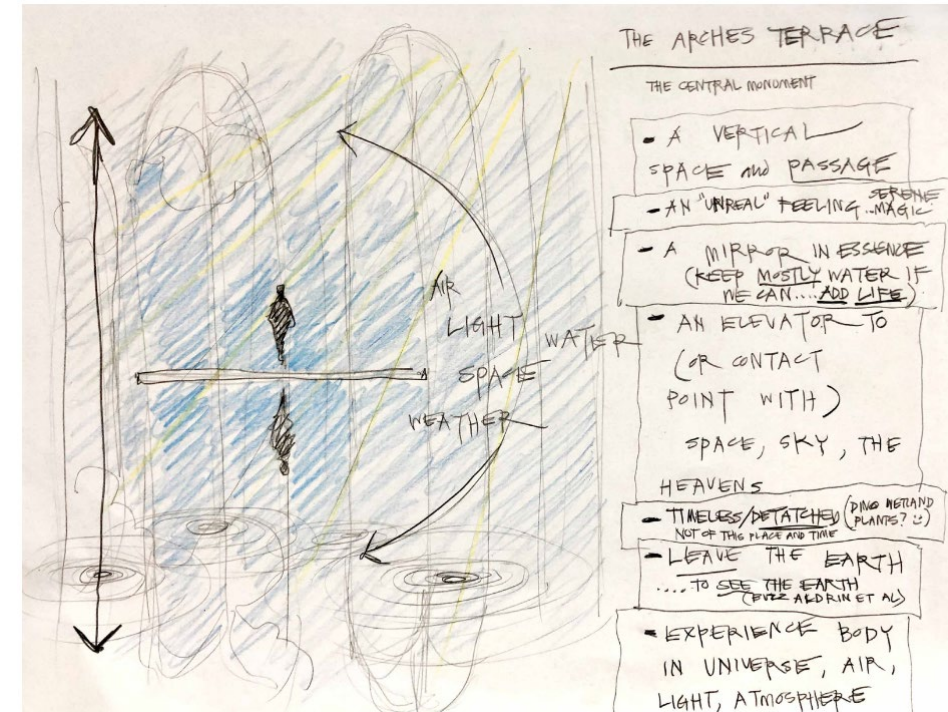
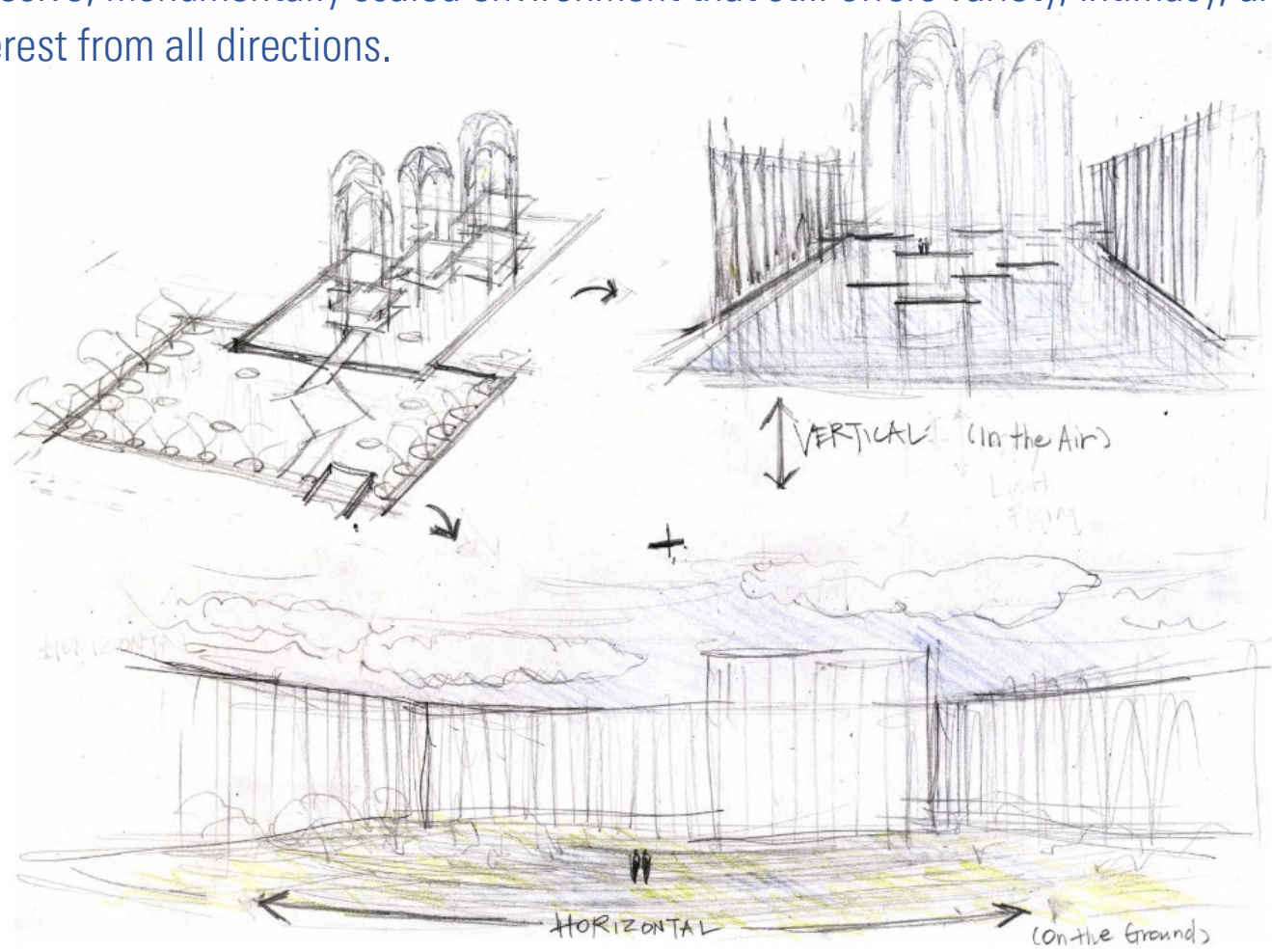
Project Vision

“We have a vision to transform the courtyard of PacSci’s Seattle Center campus into an urban ecosystem that integrates water, native plants, and animals. The courtyard will continue to be a beautiful setting balancing the built environment and living things. Visitors and program participants will learn about the natural systems that surround us and make our lives possible (air, water, soil, plants, insects, food), as well as the ways in which humans affect those natural systems.

The transformed courtyard and the transformation process itself will provide unique educational opportunities for people of all ages, cultures, and backgrounds. In keeping with the focus on native plants and natural systems, as well as PacSci’s location on the traditional lands of the Duwamish and Coast Salish Peoples, members of Indigenous communities will have central roles in the design, development, and construction, and the ongoing educational programming. Members of other communities (e.g., Black, People of Color, female/non-binary, LGBTQ+) historically excluded from STEM-oriented projects in this country will also play important roles in the project and ongoing programming.”

The fundamental design of the Courtyard is in two big parts: A “flying” vertical passage and a “grounded” horizontal landscape.

These two, seemingly simple spaces contrast strongly and perfectly with each other – both visually and as sensory experiences – and create a sense of excitement and harmony in moving and looking between them. Together, the two spaces form a cohesive, monumentally scaled environment that still offers variety, intimacy, and interest from all directions.



Big Idea

Two Terraces: Habitats

The Courtyard Meadow
Rain Garden: FACU species, Xeric species, pollinators, beetles, soil invertebrates/larvae, songbirds, ground nesters and foragers.



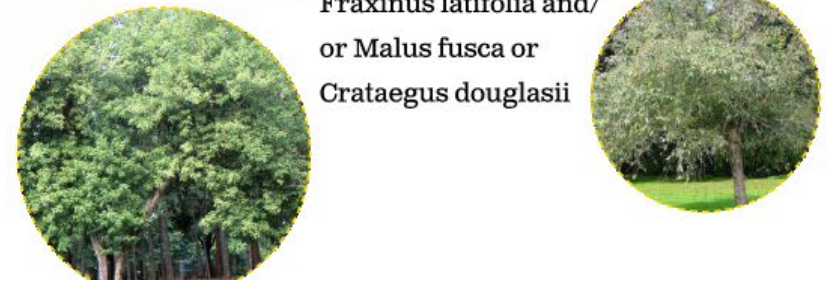
Woody Borders/ Edges: Songbirds, thicket nesters, foragers, butterfly and moth larvae



The Arches Rainwater Garden: Aquatic and FACU species of waterfowl, songbirds, bugs, invertebrates.



Replaced Trees: Fraxinus latifolia and/ or Malus fusca or Crataegus douglasii



Prior to the 1962 World's Fair, Commissioner Dr. Athelstan Spilhaus wrote about the "Aims of the United States Science Exhibit." His comments included:

"Science belongs to people, all people. It springs from their curiosity and develops in their thoughts and conversations. Science is done by people; its findings are used by people; science is enjoyed by people.."

"There are no compartments, no permanent divisions, in science. On the contrary, there exists a rich potential for future relationships which we barely imagine. By its very nature, science will always be an unfinished story."

"The hit of the Seattle World's Fair is the United States Science Pavilion, a dreamlike building before which people stand murmuring, 'beautiful,' and through which they move not saying much because they are so fascinated by its exhibits.

*Scientists and display experts working together have created models, charts, and working demonstrations outlining the **history, techniques and objectives of science in ways as spectacular to look at as they are impressive to think about.***

*The pavilion and its contents add up to a largely unexpected hint that **art, as part of man's search for spiritual expression, and science, as his search for objective knowledge, may eventually meet on common ground, not because one may serve the other but because their goals may fuse.***

The idea is not new to philosopher-scientists or scientist-philosophers, but here it takes a step toward popular realization."

Scoping & Recommendations

Imperative Scope

- Maintain Existing Operations for Another 20-25 Years
- Operational, Safety, and Accessibility Reports
- No Change in Program

Transformation

More in keeping with mission of science & inclusion. Concept can be implemented in varying scales:

Minor
Enhancement

A Nod to the
Ecosystem Vision

Significant
Enhancement

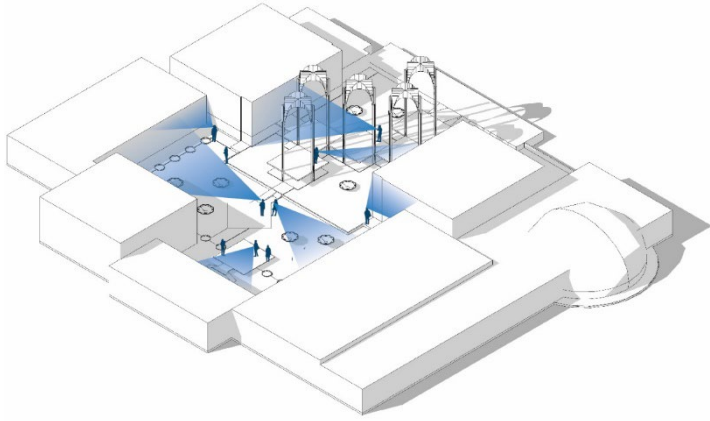
Complete
Transformation
Vision. Some Water
Independence

Major
Enhancement

Complete
Transformation
Vision 90%-100%
Water Independence



Evaluation Reports – Technical & Physical Challenges



- Permitting
- Historic structures
- Accessibility / User experience
- Structural condition
- Seismic assessment
- Waterproofing
- Plumbing and Electrical
- Water source / Utilities



Imperative Scope

Scope of Work required to Maintain the Operations

- Safety, and Accessibility of the Courtyard Facility for its Current Public Use.
- Assume Extending the Useful Life Expectancy Another 20-25 Years.

Four Major Components

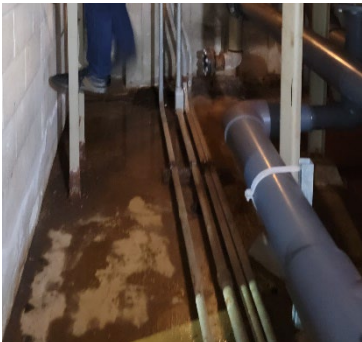
- Pool Waterproofing
- Plumbing Systems
- Accessibility
- Building Envelope Integrity

Observations - Waterproofing

Imperative Scope:

Locate and Repair the Pool Leaks to prevent Significant Water Loss.

- **Additional Investigations** are required to verify the source of the leak(s)
- Repairing Joints, Epoxy Grout Crack Injections, a Vinyl Liner, or a Liquid Applied Liner.
- Plumbing Replacement (As Source of Leaks)



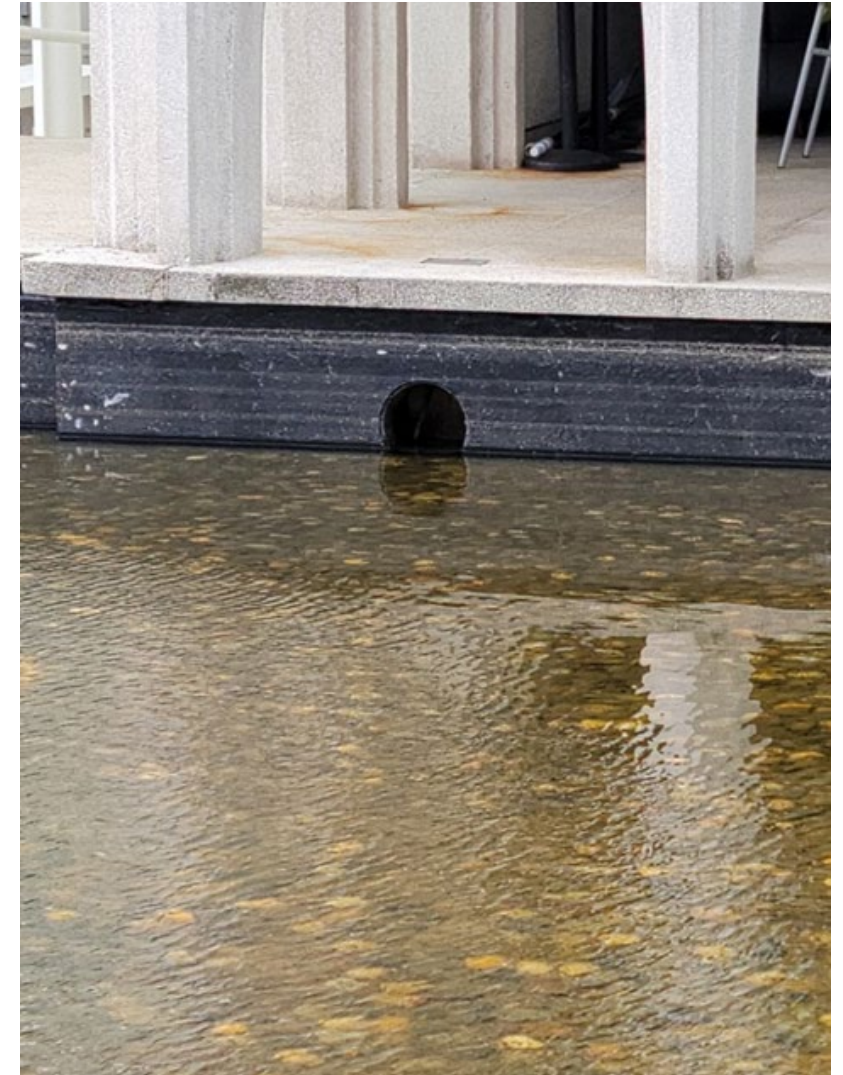
Water in Utility Tunnel



Low Water Level – Upper Pool



Joint @ Pool Bottom



Level of Water – Evidence of Leaking

Observations - Plumbing

Imperative Scope:

Replace Pool Plumbing Systems that Could Catastrophically Fail Without Notice.

- All Systems Have **Exceeded Their Useful Life Expectancy:** Circulation Piping, Pumps, Filtration, and Treatment Systems. (Waste Line is Likely Usable)
- Some Parts of the System have already been decommissioned
- Pac Sci is currently incurring **Excessive Maintenance Costs**



Feature Pump



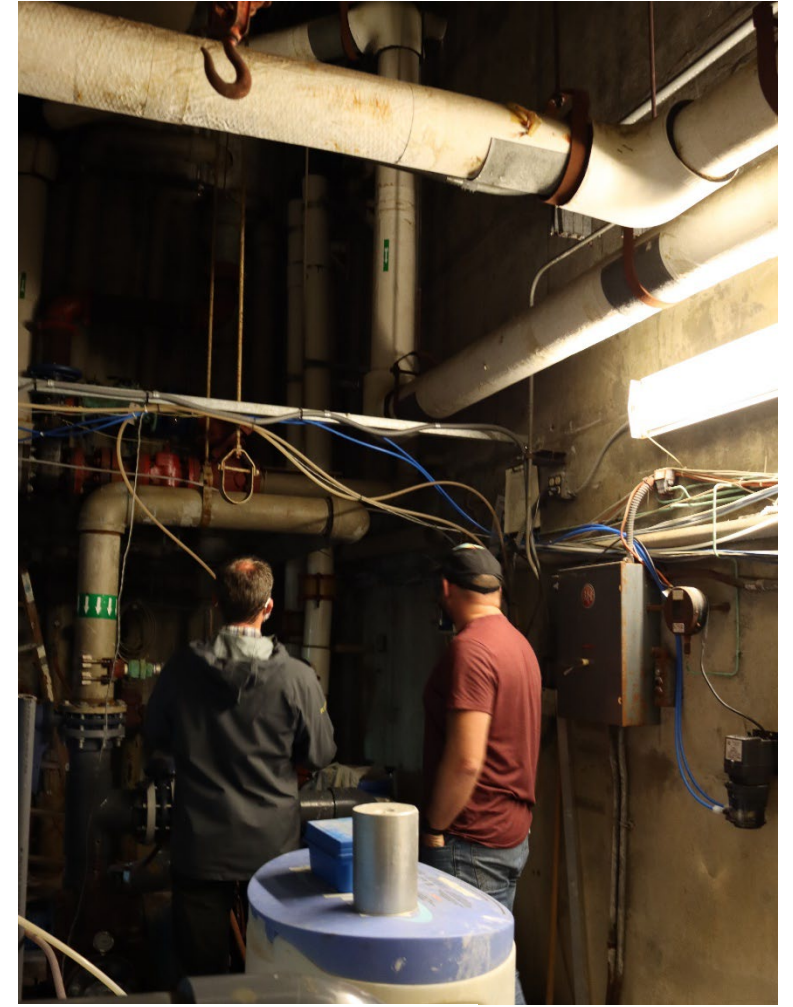
Decommissioned Pipes



Existing Pump



Feature Pump



Existing Pool Mechanical Room

Observations - Accessibility

Imperative Scope:

Include Accessibility Upgrades for Improved Public Access

- Under the Americans with Disabilities Act (ADA), there is an **ongoing obligation for building owners to have a plan to remove barriers**.
- Main Entrance, Restroom, Pool Edges, Limited Plaza Surfaces



Lack of Railings Creates Hazards



Restroom Door



Damaged Terrazzo



No Accessible Access to the Elevated Platform

Building Envelope Integrity

Imperative Scope: Maintain Existing Building Envelope

- Maintain the Concrete Weather Tight Condition
- Protect and Extend the Building Integrity



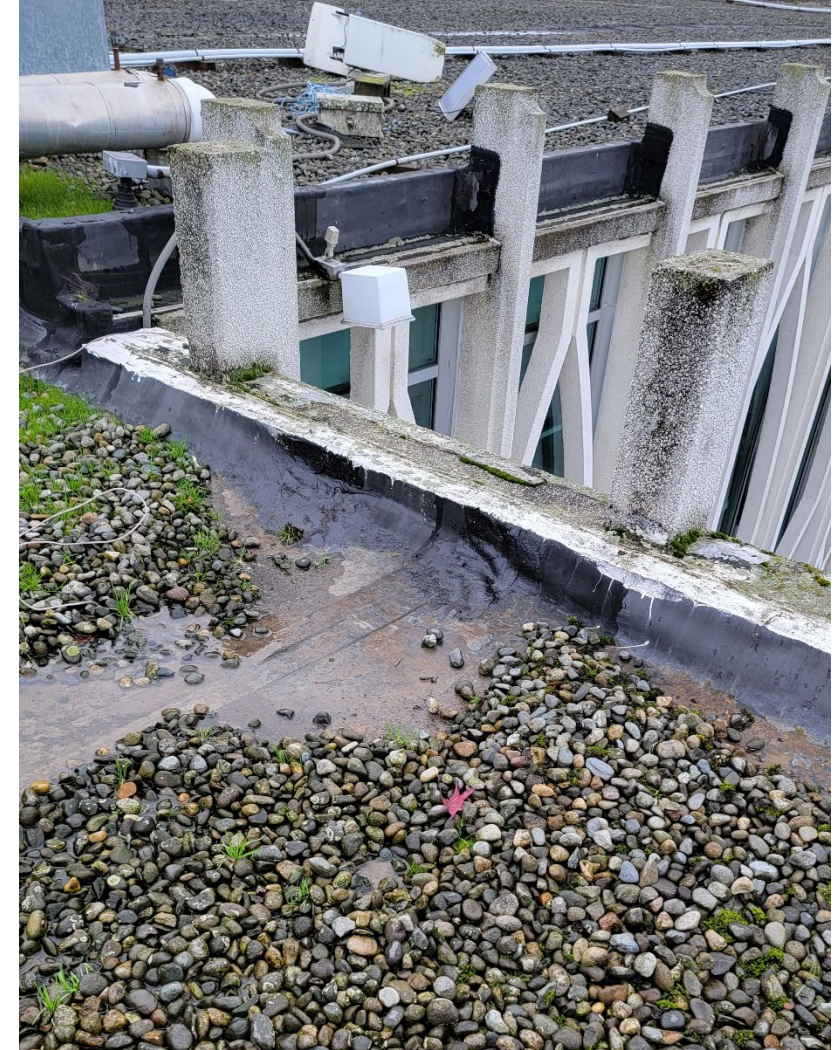
Ponding Water on Roof



Interior View of Concrete Wall Panels



Roof Seal Damage

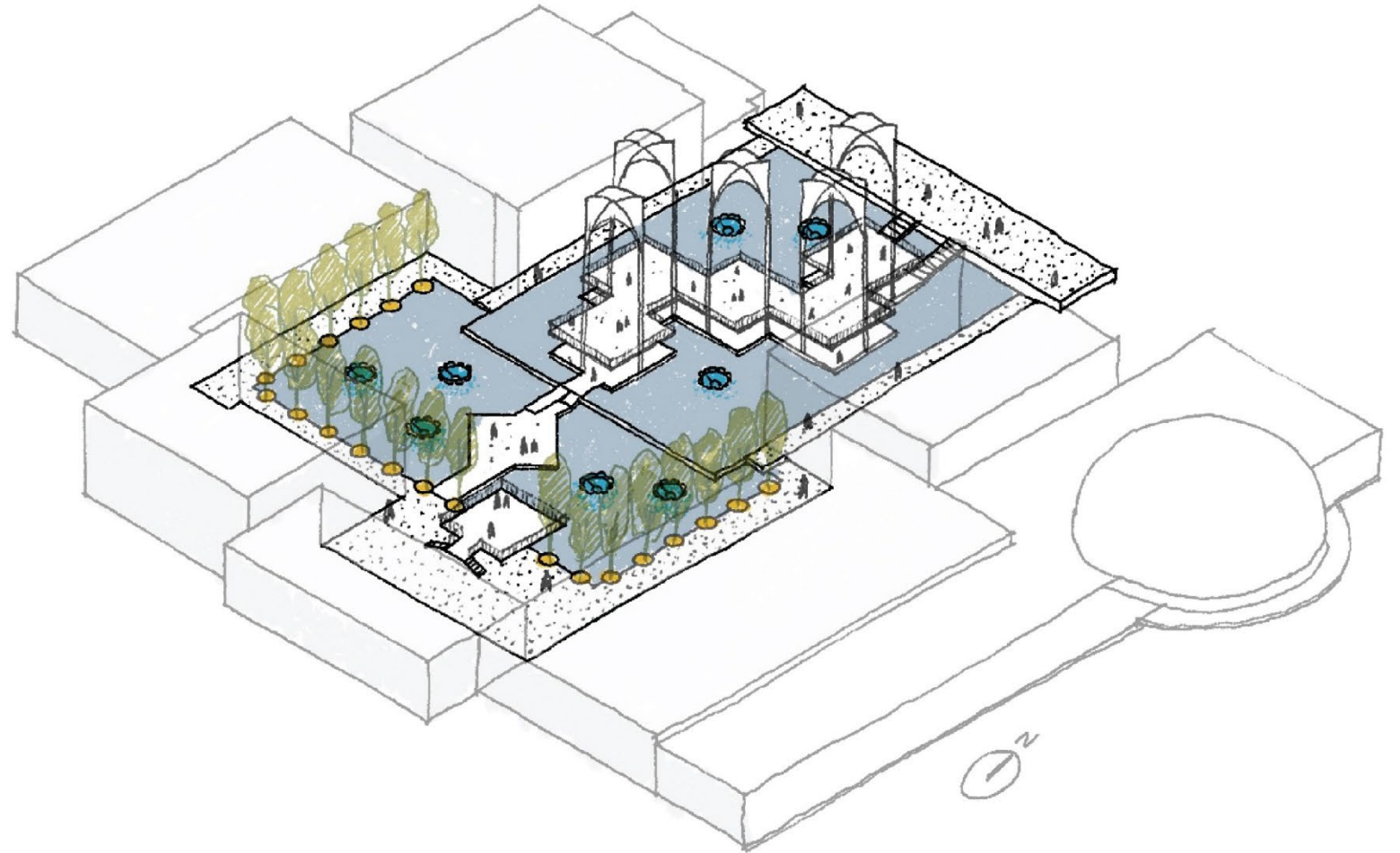


Roof at Building 2 looking at Building 3

Imperative Scope = Preserving the Courtyard

IMPERATIVE SCOPE

- Maintain Existing Operations another 20-25 years
- No program enhancement. Continue to operate as-is.
- Fix Pool Leaks
- Replace Pool Plumbing Systems
- Accessibility Upgrades; including entry gate, restroom access, pool edges, and < 1,500sf of hard-scape
- Building Envelope Integrity

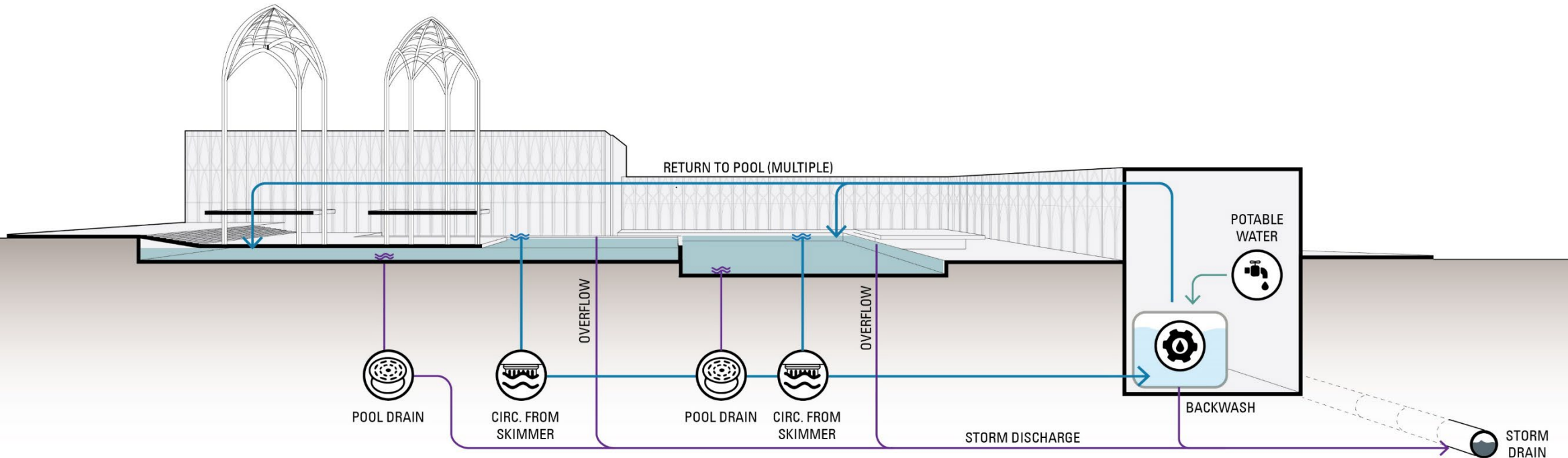
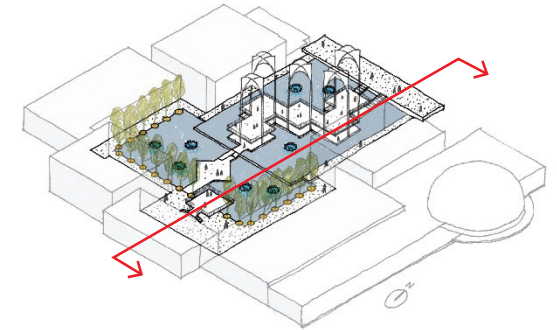


System Strategies

IMPERATIVE SCOPE

Replace the pool plumbing system

- Existing pool system supplies water to both pools
- Water is circulated through surface skimmers back to the mechanical room
- The water is filtered (sand) and distributed back to the pools.
- 100% potable water used
- Drains directly to the storm drain.



Enhancement Options

Minor Enhancement

- An incremental nod to the study of the ecosystem of our natural environment

Significant Enhancement

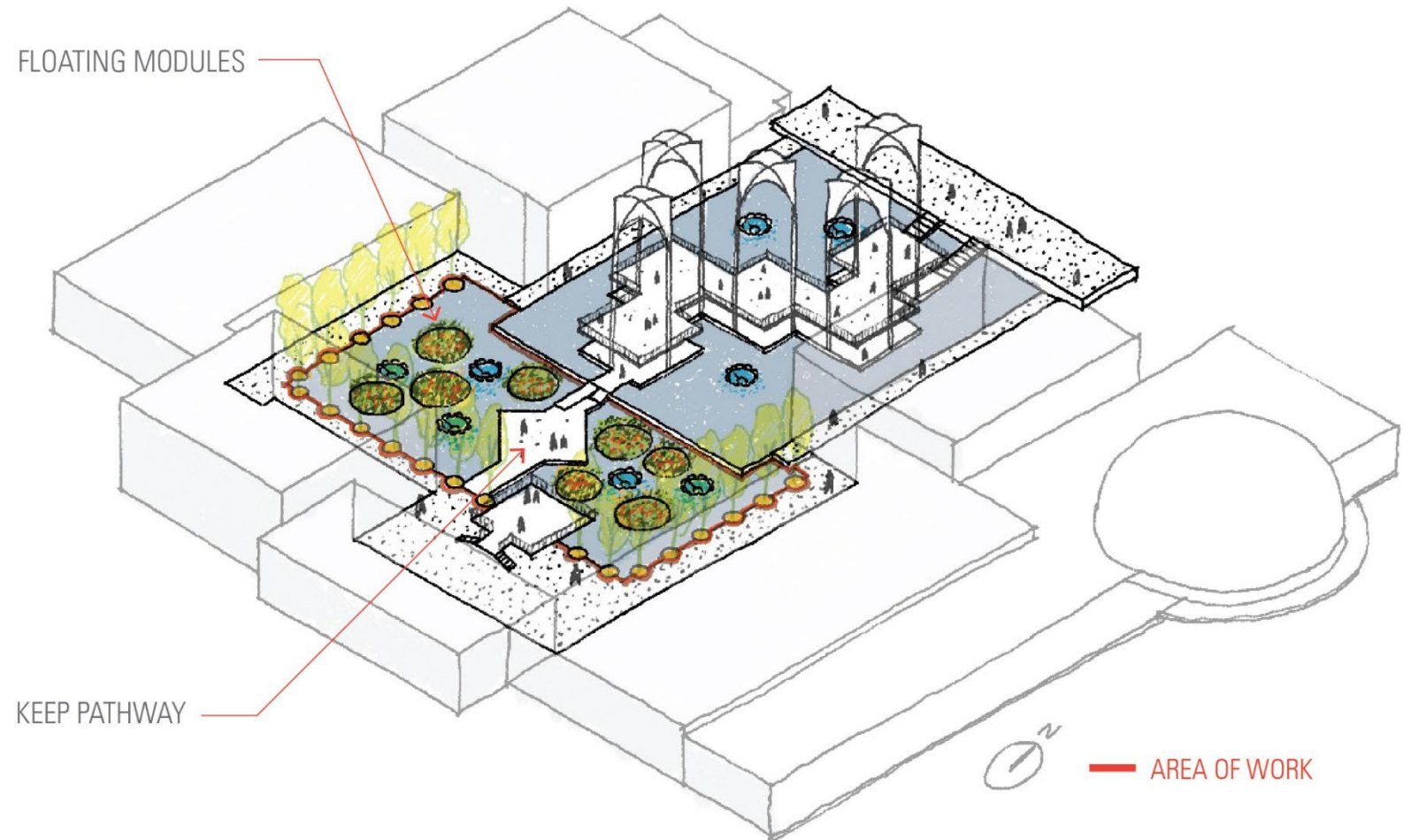
- Implement the courtyard transformation of the planted meadow in the lower pool, harvesting as much rainwater as possible, but does not achieve water independence.

Major Enhancement

- Implement the courtyard transformation of the planted meadow in the lower pool, with a moat of water. Harvesting rainwater (and other sources) to achieve 90% - 100% water independence.

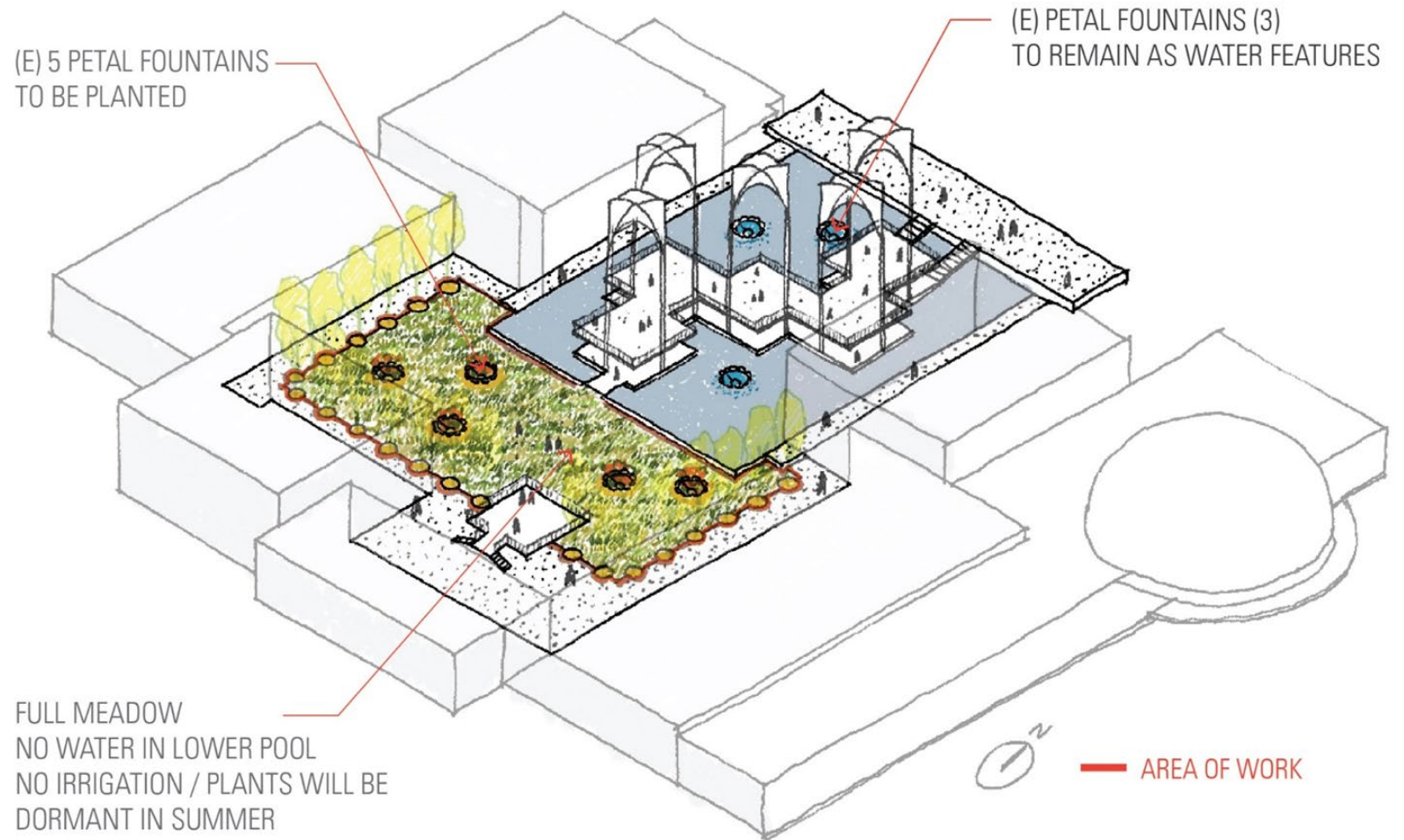
MINOR ENHANCEMENT OPTION

- Imperative Scope plus:
- Strategic Intervention of planted "module" pots in the lower pool.
- Remove the pool sculptures, including the whales, dinosaurs, and water toys
- Upgrades to pool systems
- Continued reliance on potable water for pools and irrigation.



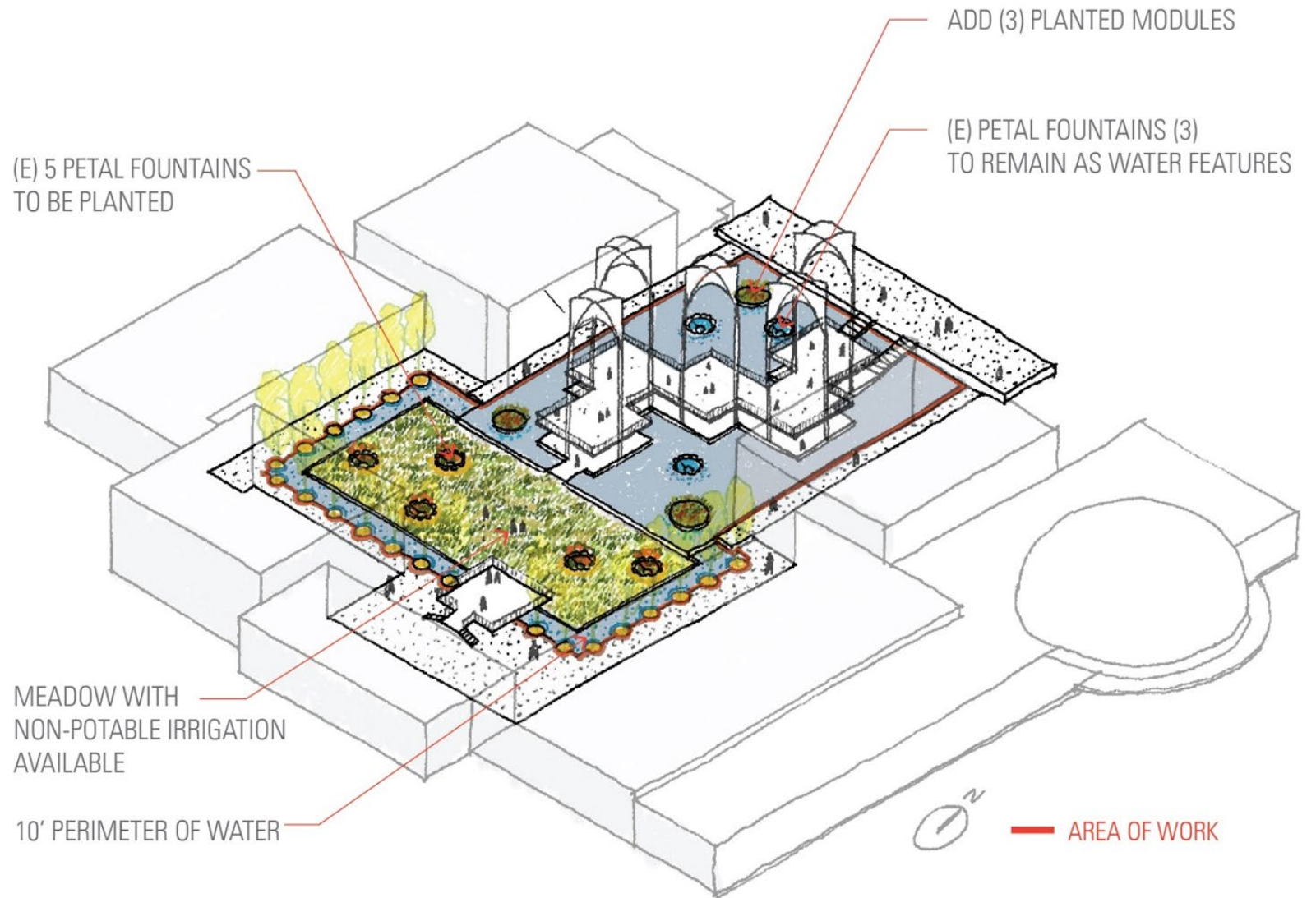
SIGNIFICANT ENHANCEMENT OPTION

- Imperative Scope plus:
- Fill in lower pool to create a meadow and petal fountains as planters. Native plantings, seasonal cycles.
- Remove the center elevated pathway and all pool features.
- Repair damaged terrazzo walkways at the west walkway area around lower pool. Install lift to elevated platform on the south plaza.
- Upgrades to plumbing system, with addition of a stormwater system.
- Collect rainwater within allowable capacity. Some reliance of potable water.



MAJOR ENHANCEMENT OPTION

- Imperative Scope plus:
- Fill in lower pool to create a meadow and petal fountains as planters. Add planting modules to upper pool (wet). Retain a moat at lower pool for historic reference. Native plantings, seasonal cycles.
- Remove the center elevated pathway and all pool features.
- Repair all damaged terrazzo walkways. Install lift to elevated platform on the south plaza.
- Upgrades to plumbing system, with addition of a stormwater system.
- Collect rainwater and provide adequate storage capacity for 90% or 100% water independence. Ability to capture water sources such as from the ice at Climate Pledge Arena.



Secretary of Interior Standards

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

1. **A property shall be used for its historic purpose** or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. **The historic character of a property shall be retained and preserved.** The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. **Each property shall be recognized as a physical record of its time, place, and use.** Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. **Most properties change over time;** those changes that have acquired historic significance in their own right shall be retained and preserved.
5. **Distinctive features, finishes, and construction techniques or examples of craftsmanship** that characterize a historic property shall be preserved.

Secretary of Interior Standards

6. Deteriorated historic features shall be repaired rather than replaced. **Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities** and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. **The new work shall be differentiated from the old** and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. **New additions** and adjacent or related new construction shall be undertaken in such a manner that **if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.**

Questions / Reactions

