Castle Island Restroom Improvements

Feasibility Study

Tuesday, November 14, 2023

6:00 p.m.

Virtual Meeting

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Commonwealth of Massachusetts

Governor
Maura T. Healey

Lieutenant Governor
Kimberly Driscoll

Energy and Environmental Secretary
Rebecca Tepper

Department of Conservation and Recreation Commissioner
Brian Arrigo

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

DCR Mission

To protect, promote and enhance our common wealth of natural, cultural and recreational resources for the well-being of all.

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Meeting Format:

- Our speakers will present the projects, asking attendees to remain muted.
- Two ways to ask questions during the Q&A period:
  - Use the chat feature, or
  - Raise your hand using Zoom function, wait for permission.
- This public meeting will be recorded, and posted after the meeting
- You can submit comments and questions through November 21st at *https//www.mass.gov/forms/dcr-public-comments*

Agenda

- Goals and Current Conditions
- Castle Island Site information
- Sullivans & Central Restroom Sites
- Preliminary Plans & Elevations
- Architectural Character
- Net Zero and Flood Protection
- Questions and Comments

Project Introduction and Goals

In April 2022, the DCR hired HKT Architects to conduct a survey, site analysis, site selection, schematic designs and strategy to improve restroom facilities on Castle Island.

In Nov 2022 DCR held a public meeting to share the information and site selections

Goals:

- Improve restroom amenities
- Increase restroom capacity
- Locate where needed by visitors
- Match demand to seasonal fluctuations
- Respect the island's historic significance
- Plan for climate impacts
- Construct net-zero buildings

Visitors and Seasonal Use

Castle Island welcomes thousands of visitors a year.
A comprehensive visitor analysis in July 2022 recorded 1,000 visitors during peak hours.

The winter season experiences the lowest visitor numbers, with many visiting only Sullivan's Restaurant.

Visitors and Seasonal Use

Castle Island welcomes thousands of visitors a year.
A comprehensive visitor analysis in July 2022 recorded 1,000 visitors during peak hours.

The winter season experiences the lowest visitor numbers, with many visiting only Sullivan's Restaurant.

Current Restroom Facilities

Old, undersized and in poor condition.

The total number of fixtures available during the summer is 19.
The seasonal restroom has 13 toilets, Spring through Fall, plus portables.

Portable toilets are in use year-round and are the only option in Winter with 4-6 portables typically available.

Popular Attractions:

The popular east side of the Island was selected by DCR for this study

- Fort Independence, with tours conducted summer weekends
- Sullivan's Restaurant and plaza
- The playground
- Small and large beaches
- Several picnic areas
- Harry McDonough Sailing Center, open in July & August

Site Selection Factors

- **Public Need** — Locate near popular areas and seasonal use
- **Topography** — Consider impact on accessibility and flooding
- **Historic Context** — Concern for views and sight-lines
- **Archeological** — Avoid sensitive areas on this historic site
- **Landscape** — Protect mature trees where possible
- **Climate change** — Review projections for flood risk
- **Utilities** — Proximity to existing utility service

Restroom Locations

Site analysis determined the best restroom locations:

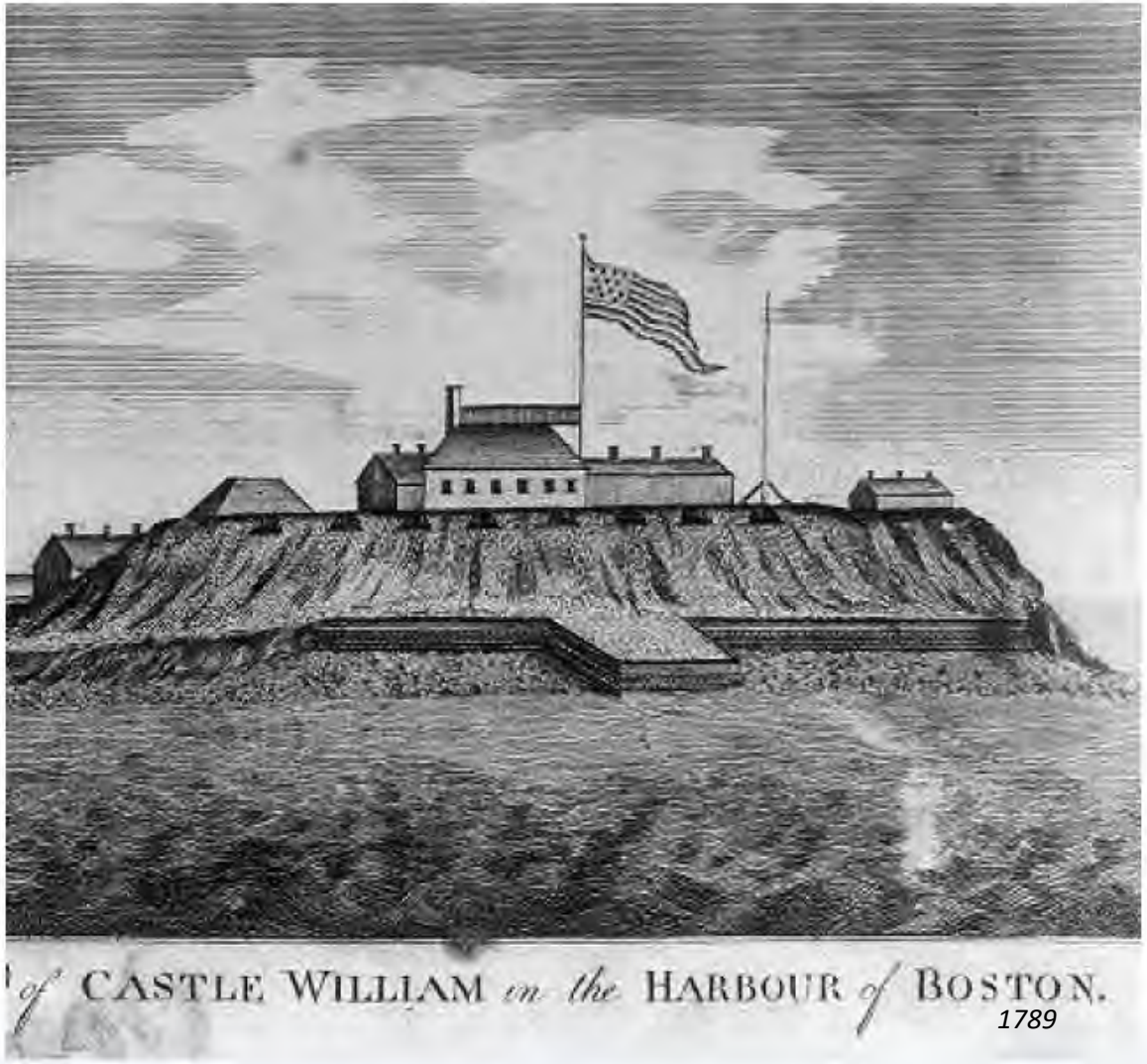
- **Behind Sullivan's Restaurant**
  - Well positioned for year-round use.
  - Accessible to all.
  - Utilities present.
  - Less disturbance to archeology, historic context and plantings.

- **Existing Restroom Site**
  - Central to popular sites,
  - Accessible to all.
  - Utilities present.
  - Elevated slightly from floods,
  - Less likely to disrupt sensitive archaeological areas.

Resiliency with Changing Climate

- One sixth of Boston is built on landfill. In 1928 Castle Island was connected with mainland Boston.
- It is expected that sea level will rise significantly in the coming years and higher tides will impact areas in Blue.
- A 2015 study by Woods Hole Oceanographic Institute projects a 21" increase in sea-level by 2050, and 36" increase by 2070.
- It is possible to build in flood prone areas. Higher design standards must be met to construct buildings less impacted by flooding.

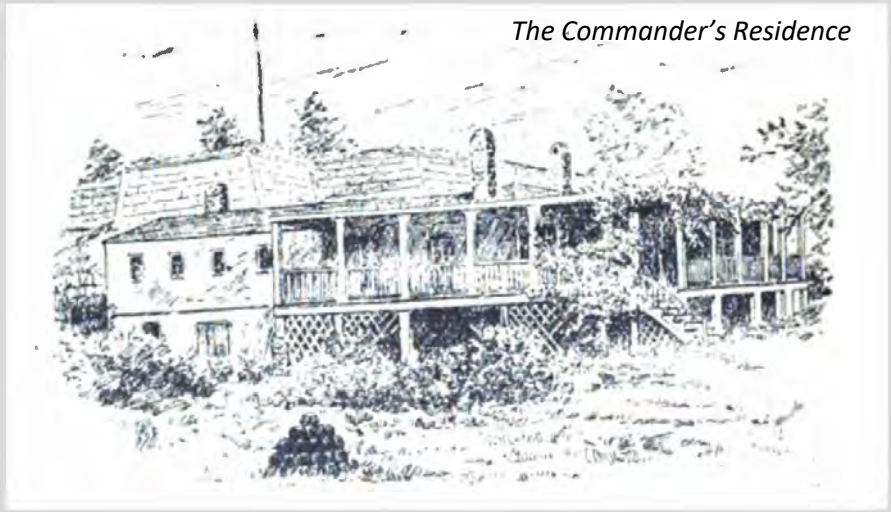
Archaeological & Historic Sensitivity



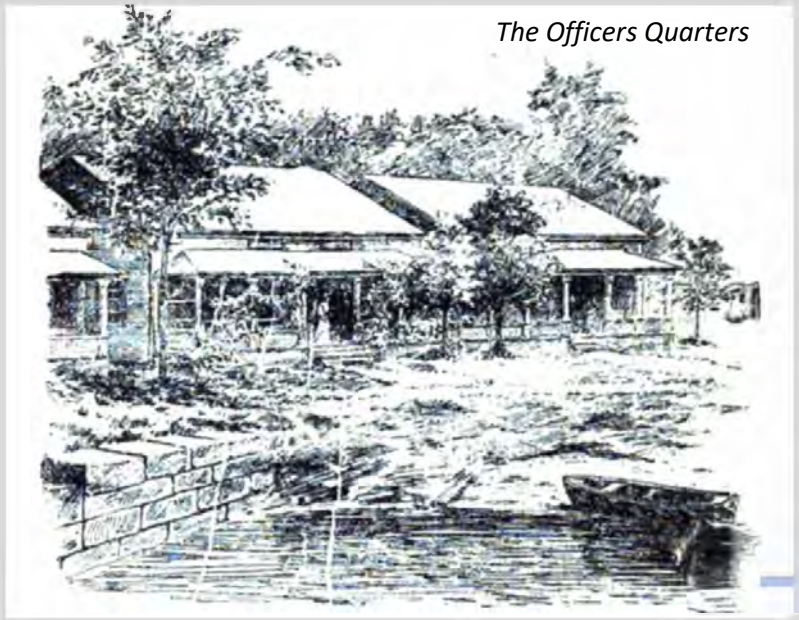
- Castle Island has occupied an important place in the traditional tribal homeland of the Massachusett people for many generations.
- The first military fortifications were built in 1634 and were modified and expanded through the Second World War.
- DCR's mission requires us to be respectful of the historic context and history, both the visible and invisible under our feet, preserving sites for the future.
- Archaeological investigations will be required for excavations within sensitive areas.

The Castle- Sketches of Fort Independence 1895, Boston Monthly Magazine

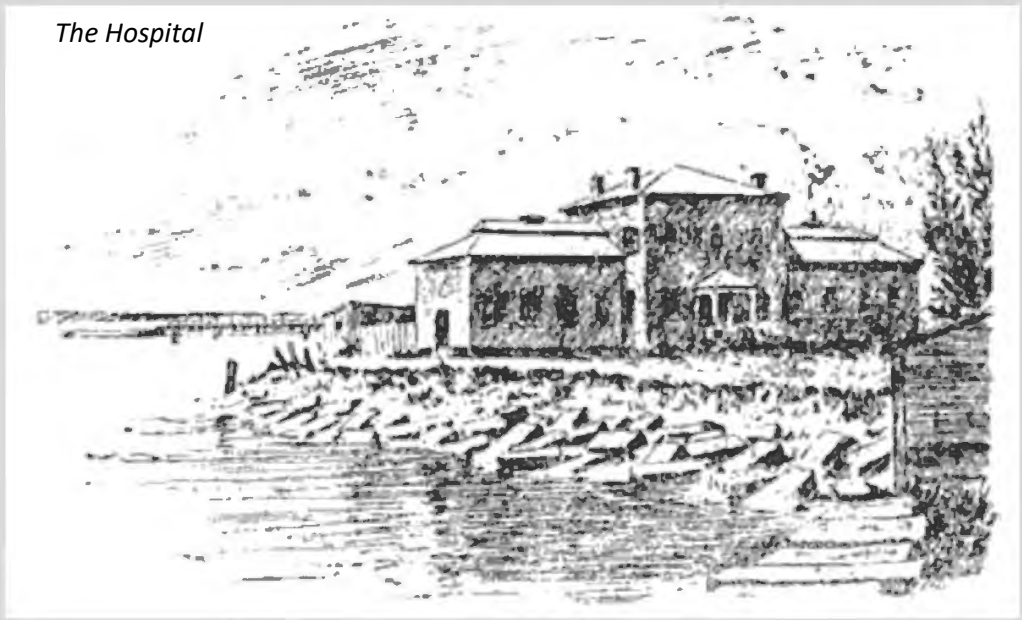
Old Quarters once occupied by Ordinance Sergeant



The Commander's Residence



The Officers Quarters



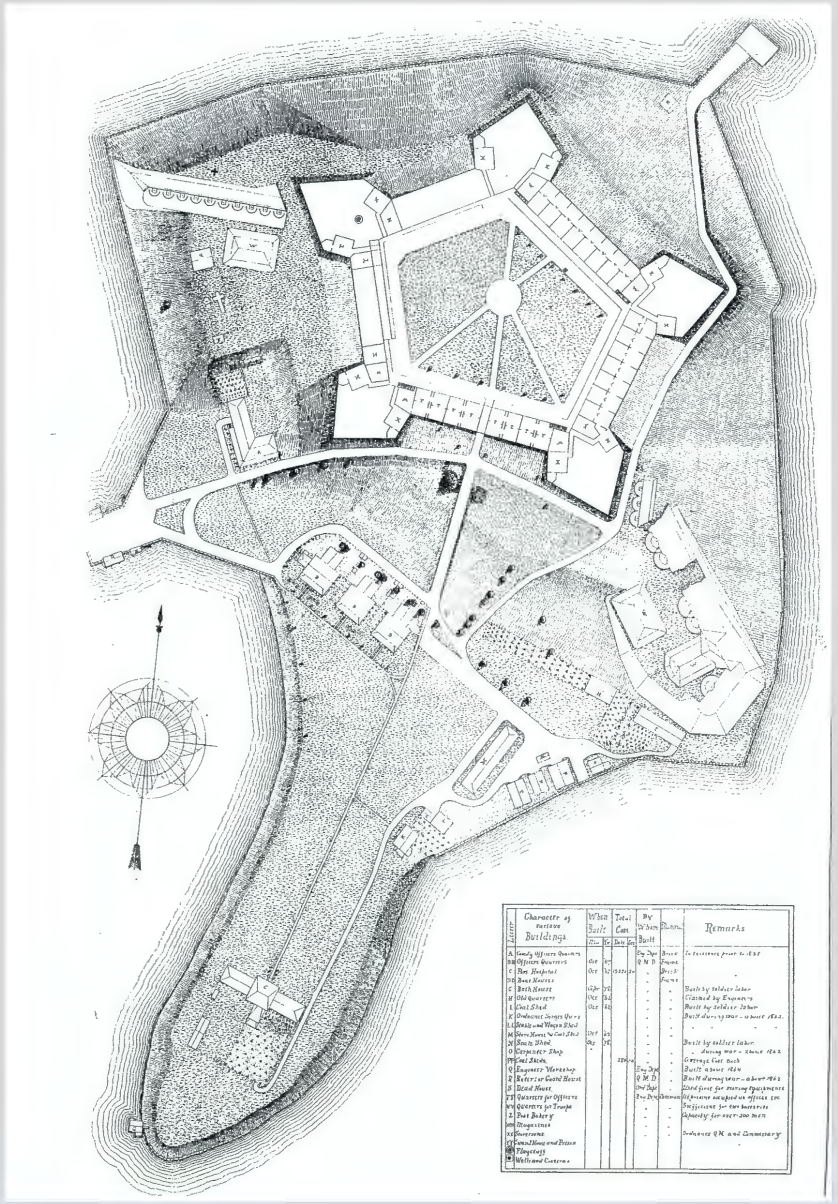
The Hospital

1898 Fort Independence Mine Explosion

Commandants House- Circa 1929 and 1960

Gun Emplacements- 1941 Historic American Buildings Survey Photo

1898 Gun Emplacements- west side of island, view to south

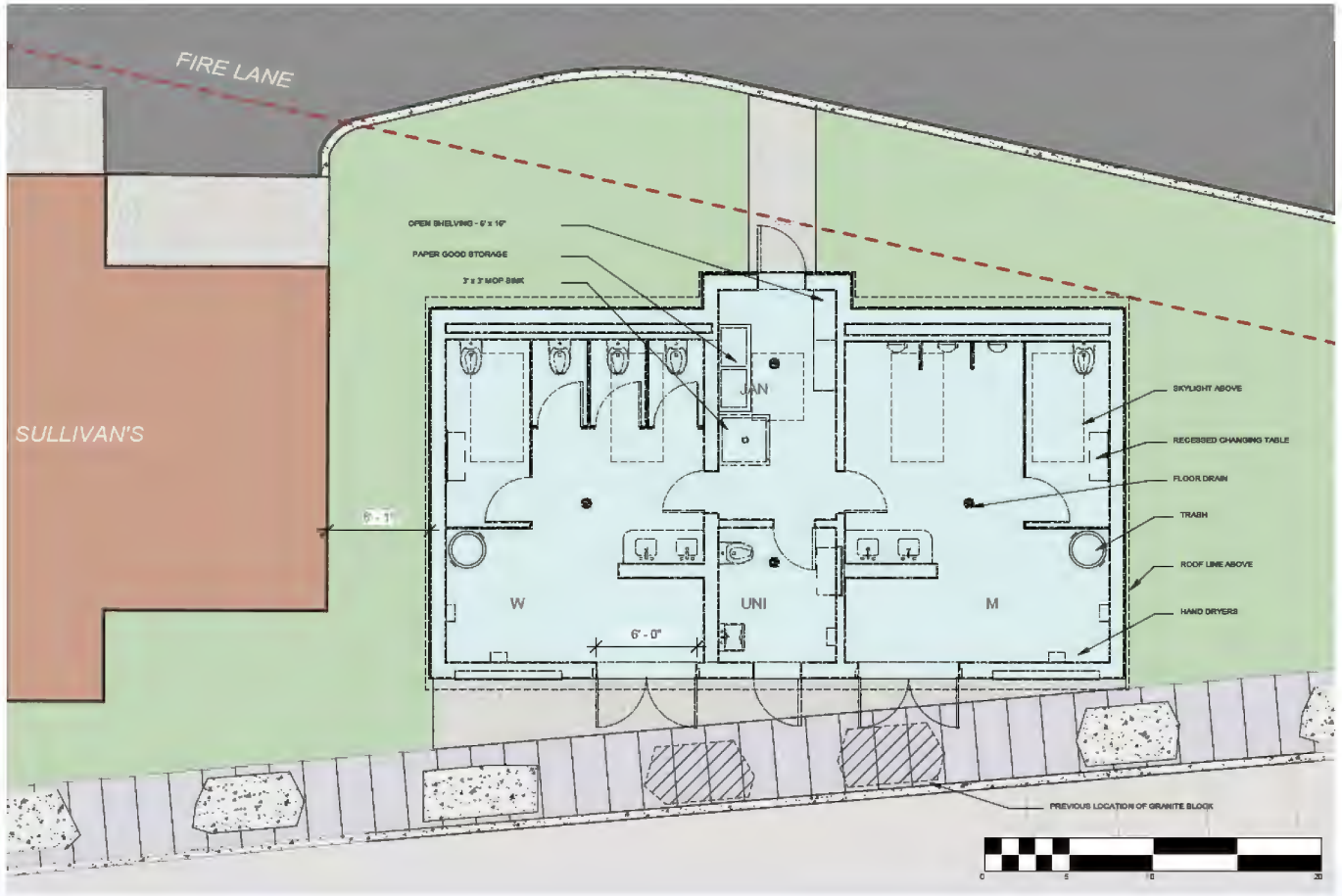


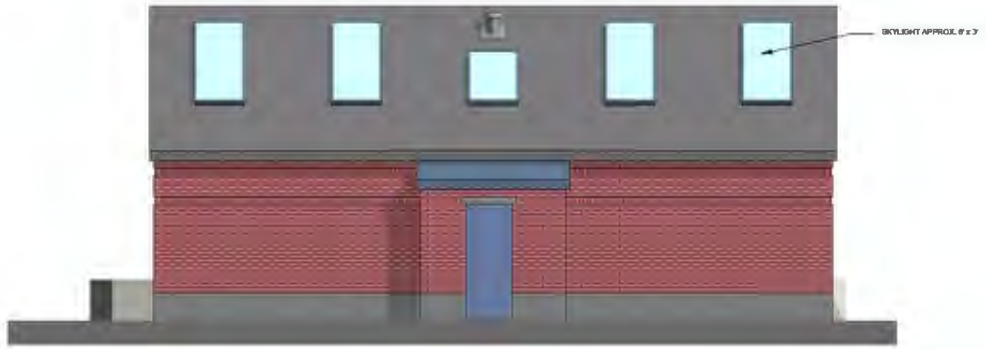
1870 plan of Island

Public Park Structures

Sullivans Restroom- Preliminary Plans and Elevations

Open year-round, 9 toilets/urinals, including 1 family toilet.
Estimated Cost - $1.8 million

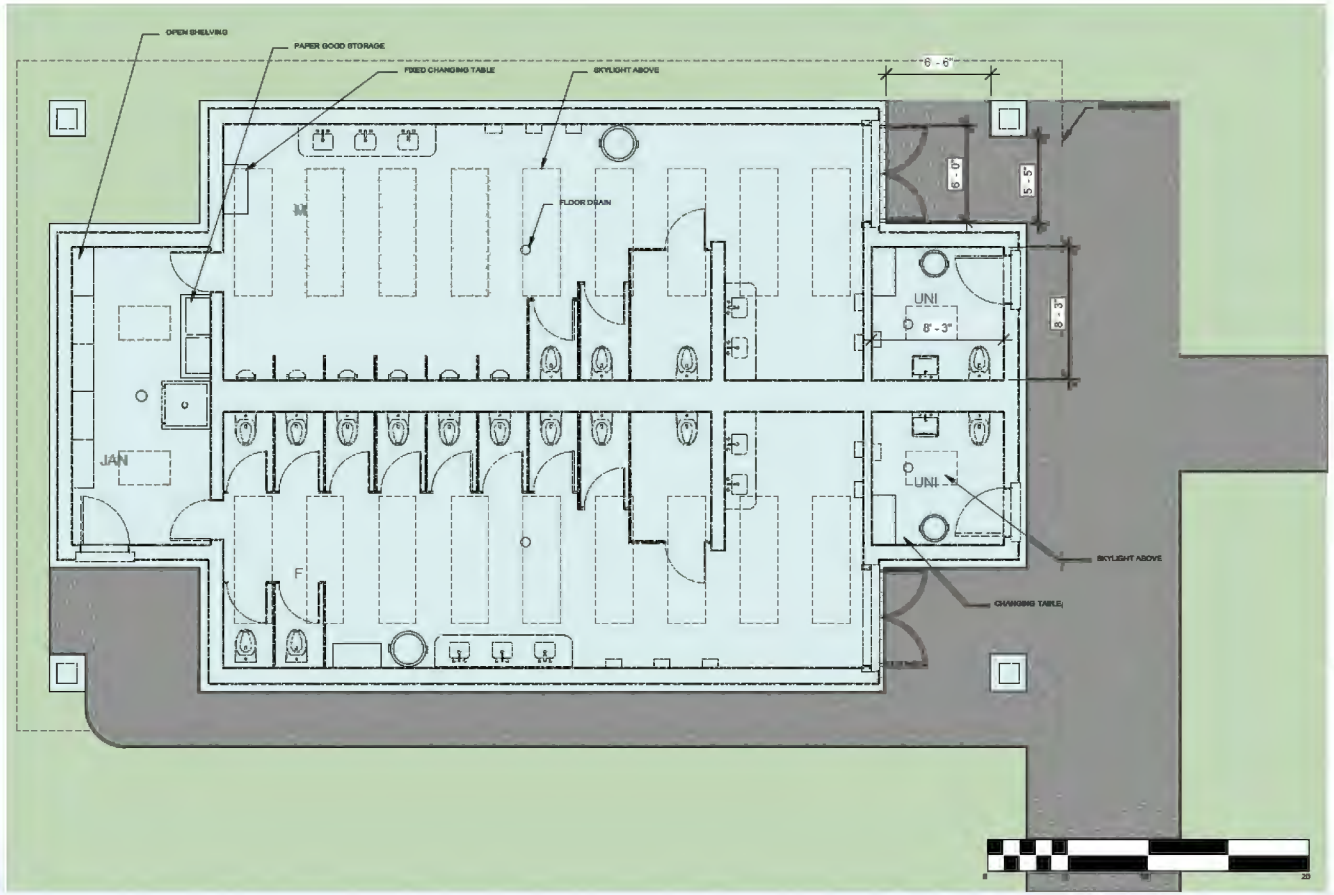




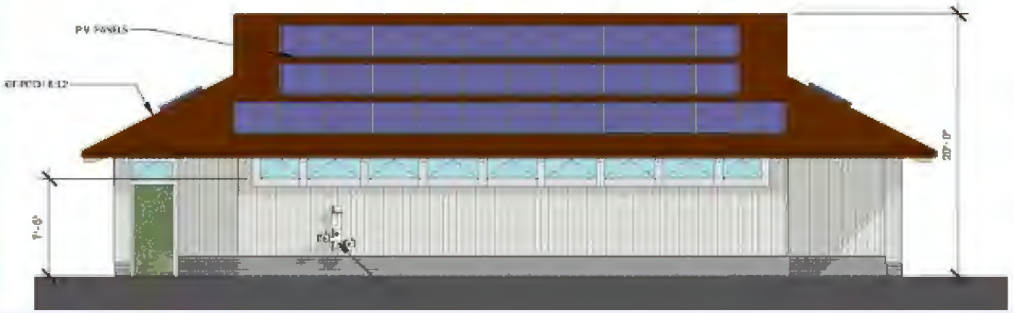
HKT architects inc.

Central Restroom- Preliminary Plans and Elevations

22 toilets/urinals, Seasonal Facility, Family Toilets, Rinsing Stations
Estimated Cost – $3.5 million

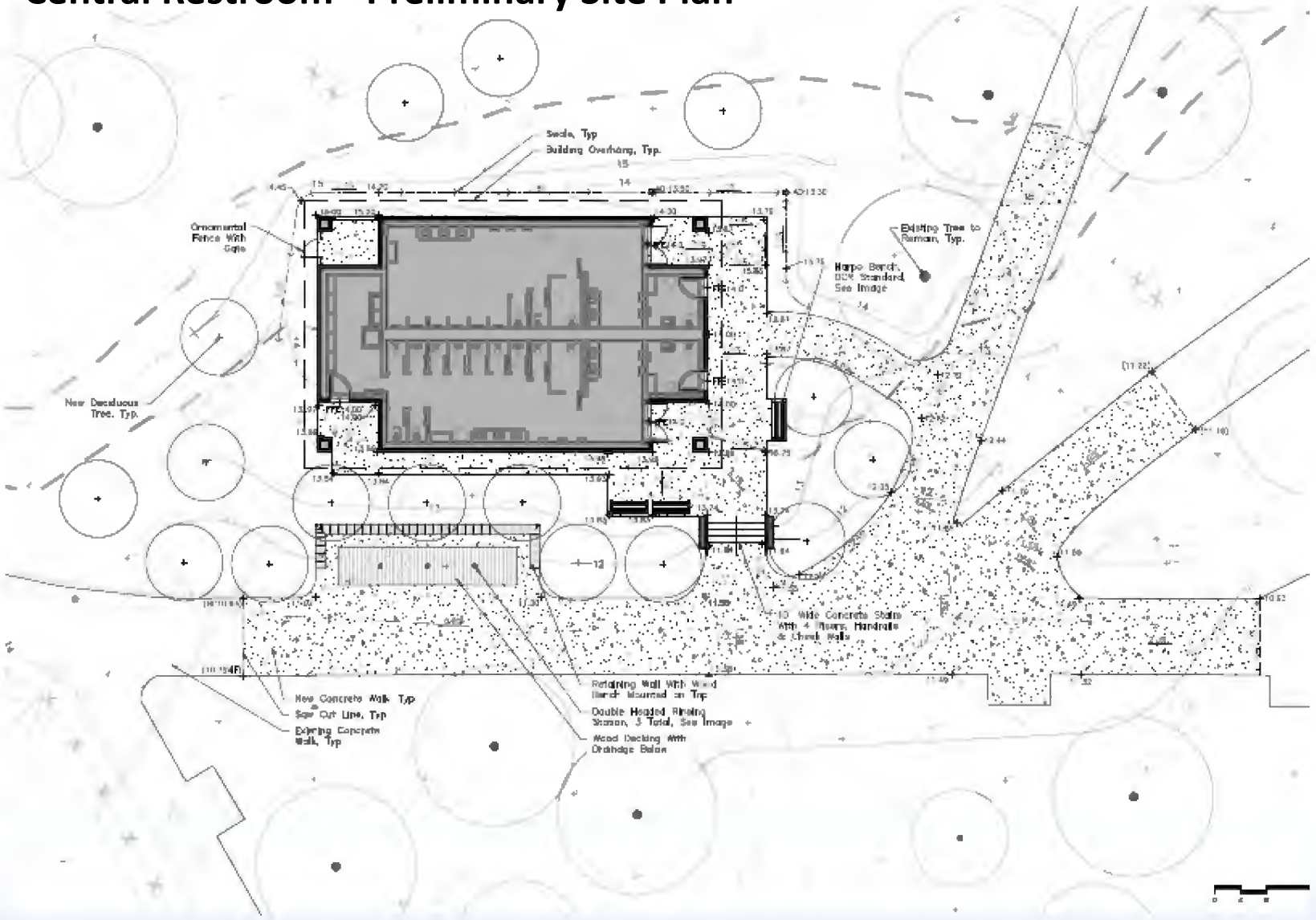


Central Restroom - South Elevation
1/8" = 1'-0"



HKT architects inc.

Central Restroom- Preliminary Site Plan



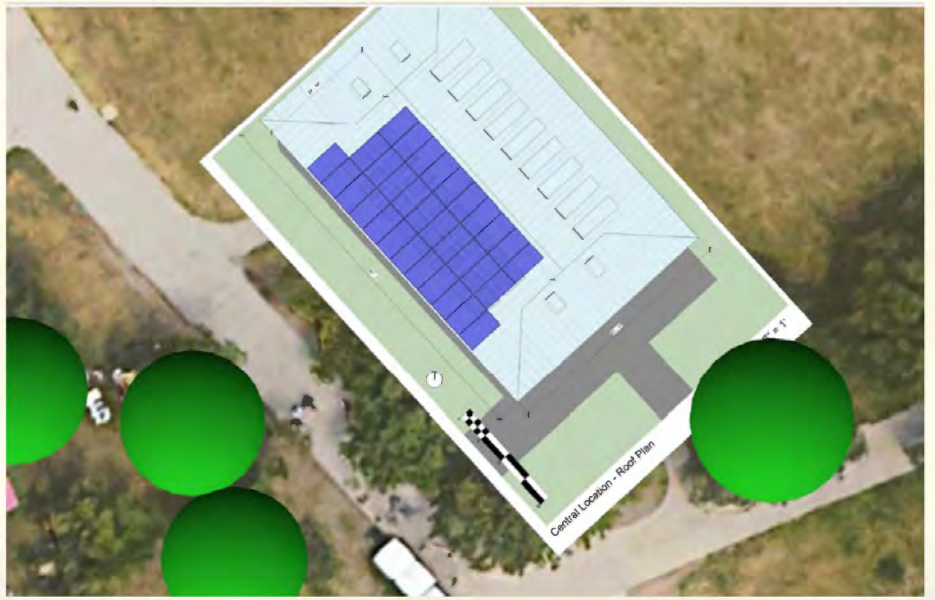
- Universal Access to the building.
- Two family toilet rooms
- Two to three rinsing stations along the promenade.
- Rinsing stations serve visitors wanting to clean up without adding to queues at restrooms and keeps sand outside.
- Seating placed outside of restroom and at rinsing area.
- A drinking fountain will be at the building

Net Zero Buildings

- Produce as much or more energy than they consume.

- Excess electricity is either -
  Stored on site in batteries for later use or
  Fed back into the grid (net metering) and shared with other users.

Sullivan's Site Restroom Roof Plan



Central Restroom Roof Plan

Net Zero Buildings

- Produce as much or more energy than they consume.

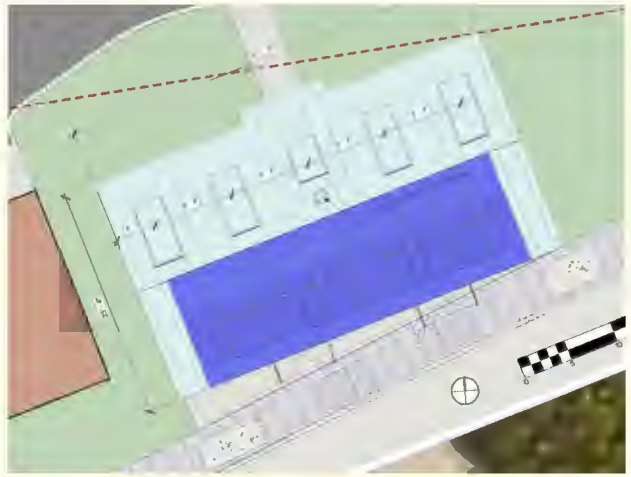
- Excess electricity is either -
  Stored on site in batteries for later use or
  Fed back into the grid (net metering) and shared with other users.

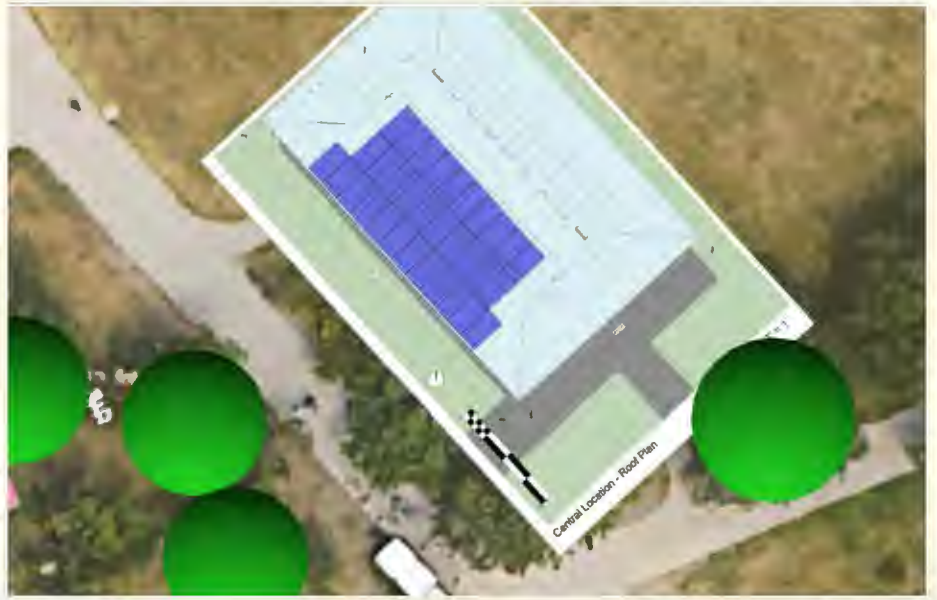
The Castle Island restrooms will meet this requirement for new state buildings and produce more energy than they use with solar panels.

Proposed Sullivan's Site PV

Proposed Central Location PV

Sullivan's Site Restroom Roof Plan





Central Restroom Roof Plan

How can we protect buildings from higher tides and storm surges?

- Build on High ground
- Raise the Building
- Construct a Dry Proof Building
- Wet Proof the Building

- **High Ground -** Studied during Site analysis. Universal access, Historic context and sensitive historic areas eliminated sites.

How can we protect buildings from higher tides and storm surges?

- Build on High ground
- Raise the Building
- Construct a Dry Proof Building
- Wet Proof the Building

- **High Ground -** Studied during Site analysis. Universal access, Historic context and sensitive historic areas eliminated sites.

- **Raise the Building -** Increases height (more foundation, greater prominence)
  Ramps required to reach floors (over 50 feet of ramp & landings for the Sullivan's site)
  More structure exposed to tides and surges.
  More areas to maintain, shovel snow, de ice.
  Further distance for users to travel.
  Fills up a small site.

How can we protect buildings from higher tides and storm surges?

- Build on High ground
- Raise the Building
- Construct a Dry Proof Building
- Wet Proof the Building

- **High Ground -** Studied during Site analysis. Universal access, Historic context and sensitive historic areas eliminated sites.

- **Raise the Building -** Increases height (more foundation, greater prominence)
  Ramps required to reach floors (over 50 feet of ramp & landings for the Sullivan's site)
  More structure exposed to tides and surges.
  More areas to maintain, shovel snow, de ice.
  Further distance for users to travel
  Fills up a small site

- **Dry Proofing** - Keeps water outside.

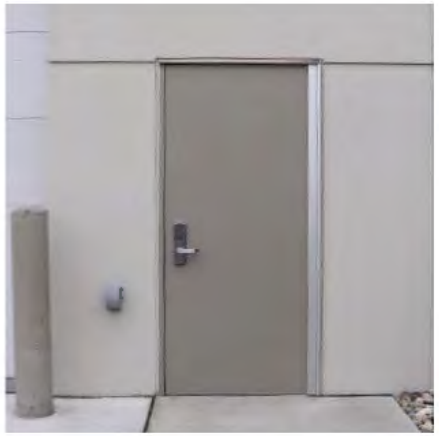
- **Wet Proofing** - Assumes the building will flood occasionally and uses materials and methods to allow this without causing damage, via concrete floors, durable finishes and elevated utilities.

The Castle Island Restrooms will use both Wet Proof and Dry Proof methods.

Dry Proofing- keeps water outside, the Protection can be either Passive or Active

Passive Flood Protection does not require human action to achieve protection

Active Flood Protection requires human intervention.



Passive Protection –

- Door only needs to be closed to work.
- Appearance similar to any door.
- Can protect against floods 8’ high

Active Protection -

- Panels attach to channels
- Stored on site.
- Panels are large pieces
- Manually Installed.

The use of Passive flood protection will ensure structures are protected without human intervention.

The Castle Island Restrooms will be designed to be:

Wet Proof - Assumes building may occasionally flood

&

Dry Proof - Designed to keep water out, using a Passive Flood Protection System

At Castle Island the use of Passive flood protection ensures the structures are protected even when the park is closed.

We believe these methods are the most responsible way to address climate resilience at this site.

Next Steps

- **Consultant begins design and permitting of both restrooms - Early 2024.**
- **Construction Documents Completed 2024**
- **Project Bid and construction begins**
- **Restrooms will likely be built in in phases – in line with available funding.**

Meeting Format:

- Two ways to ask questions during the Q&A period:
  - Use the chat feature, or
  - Raise your hand using Zoom function, wait for permission.
- This public meeting will be recorded and posted after the meeting

Thank you

Questions? Comments?

Please submit your comments by November 21, 2023 to:

https://www.mass.gov/forms/dcr-public-comments

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION


Sullivan's


FINIS