

Begg Pool Modernization Study

CITY OF MANHATTAN BEACH



HMC Architects



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design for good.

Founded with the purpose of anticipating community needs, HMC aims to create designs that have a positive impact, now and into the future.

We focus primarily on opportunities to have the most direct contribution to communities — through healthcare, education, and civic spaces.



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Executive Summary

BACKGROUND & FINDINGS

BACKGROUND:

Originally built in the 1950s, Begg Pool is located at 1402 N. Peck Avenue and has served the community for over 60 years. Initially designed to support Manhattan Beach Middle School west of the project site, the original facility consisted of a 5,760 SF locker room and a shallow 25-yard pool with six lanes. The only major elements added since original construction include a small modular building that houses the lifeguards and a second small structure for the pool mechanical equipment.

Begg Pool hosts a variety of recreation programs and classes, including swim lessons, lap swim, swim team, water aerobics, summer camp programs, water safety classes, recreational water play, and required Manhattan Beach Middle School physical education swim classes. The City-offered classes are very popular and often reach capacity within the first few minutes of registration due to the facility's current small size. The City desires to expand its ability to serve all community members interested in aquatic recreation.

Due to age and deterioration, the Begg Pool facility requires significant pool, mechanical, electrical, plumbing, locker room, and additional upgrades. The City operates Begg Pool as part of a Joint Use Agreement with Manhattan Beach Unified School District (MBUSD), the owner of the parcel.

After a request for proposals and review, HMC Architects was hired to provide recommendations about the following options:

- Option 1 – Renovation of the existing 25-yard shallow pool and support buildings at the current Begg site
- Option 2 – A new community Aquatics Center including one 25-yard shallow pool, one 35-meter competition pool, and new support buildings at the current Begg site

FINDINGS:

The Begg Pool Modernization Study included the following five tasks.

1. Site Analysis
2. Community Engagement
3. Needs Assessment
4. Conceptual Design
5. Preparation of a Basis of Design Report, including estimates of probable cost for design, construction, and operation, as well as required site improvements for both options

Site Analysis

HMC Architects mobilized an engineering team to begin site analysis of the existing facilities at the Begg site in August 2023. This included an architectural assessment of the site and buildings along with engineering reviews of the mechanical, plumbing, and electrical systems. The aquatics facilities were studied along with a civil engineering assessment of the site and parking.

Notable findings include:

- Existing road doesn’t allow for 2-way traffic and is not compliant for fire access
- No accessible path of travel to public right of way
- Existing parking does not meet current code and ADA requirements
- Building needs seismic and significant mechanical, plumbing, electrical, and ADA upgrades to meet current codes
- No records showing support buildings are DSA approved
- Pool equipment needs to be upgraded and pool deck is not ADA compliant

Community Engagement and Needs Assessment

HMC conducted an online survey from October 2023-January 2024, held community meetings, and hosted stakeholder interviews as part of the community engagement and needs assessment phase. More than 1,400 survey respondents shared input about programs desired, supporting facilities, and the type of pool/pools necessary to accommodate these needs. The first community meeting on November 13, 2023, was structured as a workshop with more than 80 participants visiting numerous tables to provide input on topics similar to the online survey. This format allowed for a dialogue among the community members, the City, MBUSD, and the design team to further understand community needs and experiences with the Begg Facility. Input gathered at this in-person event closely reflected input that was received through the online survey.

Key community input included:

- More water to serve community needs, larger pool/pools
- Upgraded restroom facilities and locker rooms
- Increased pool availability
- Increased recreational use
- Increased seating and shade to support aquatics activities
- Solve for safety concerns with traffic, site access, and parking

A second community meeting was held February 27, 2024, to share conceptual design options based on input from the online survey, first community meeting, and stakeholder interviews with City and MBUSD representatives. Approximately 100 people attended this meeting, 50 in-person and 50 people via Zoom. The feedback from this call confirmed our initial findings and included some new areas of interest, including additional shade and solar energy installations.

Conceptual Designs

The architectural language for the building design uses familiar angular forms and materials in deliberate ways to create a setting that feels comfortable and familiar yet creates a distinct and dynamic sense of place. The design is focused on providing a high level of supervision and safety in several ways, including:

- Clear and controllable single point of entry
- Centralized location of the lifeguard office that provides visibility of the entire pool deck as well as entries to locker rooms
- Separation of vehicular parking lot and pedestrian spaces
- Widening of the entry driveway
- Emphasis on daylight and well-lit interior spaces
- ADA compliance and improved emergency vehicle access

For Option 1, the existing site configuration remains the same. The entire mechanical, electrical, and plumbing systems in the building will be replaced and seismically upgraded. The exterior of the building will be renovated and transformed to give it a more modern aesthetic. The interior of the existing building will be completely reconfigured to better accommodate City and District needs. The pool deck and gutter system will be replaced. This option will also include a new mechanical/storage building to properly house the pool mechanical equipment as it is not feasible to rehabilitate the existing mechanical building. The site design will allow for some enhanced seating and shading areas around the existing pool, and a new major canopy structure adjacent to the existing building, marking the entry into the aquatics complex.

Option 2 includes two all-new pools, a new aquatics building, and a new pool mechanical building in addition to site and pool deck amenities, new parking, access drive, and pedestrian ramp similar to option 1 program.

Without the constraints of the existing facility building and pool, Option 2 provides Manhattan Beach with opportunities for pool and deck space, site amenities, and building program that better aligns with the expressed goals and needs of the community. Several of these advantages are noted below.

The building will house appropriate lifeguard facilities, locker rooms, toilet rooms, and staff areas for complete supervision of the facility area. This option includes two pools. The first closely mirrors the size and depth of the existing pool with enhancements for wider lanes and step areas that facilitate swim lessons. A second 25-yard x 35-meter pool increases opportunities for aquatic programming, including the addition of water polo and other deep water uses. Multiple bodies of water allows for variable water temperatures and more clearly defined programs that can run simultaneously.

ADVANTAGE HIGHLIGHTS

Site & Pool Deck

- Increased pool deck utilization area
- Multiple bleacher seating areas provide flexibility for different program uses, such as water polo viewing on the west, versus competitive swimming viewing from the south.
- Engagement of the western hillside provides terraced covered seating areas.
- Deck layout allows for multiple controlled and concurrent uses (Community Swim in Small Pool, while High School Team Practices in the large pool)

POOLS

- Increased water area allows multiple simultaneous community activities, including capacity increase of each.
- Differing depths of each pool accommodate deep pool uses, such as swimming and water polo, and shallow pool uses, such as new swimmer lessons and family recreation uses.
- Temperature variability between pools provides ideal temperatures for different uses.
- Pool dimensions allow standard lane sizes in new pools versus narrow lane widths necessary with smaller Option 1 pool.
- Pool length stair entry on the 25-yard pool allows simultaneous entry for large groups, such as a middle school swim classes.

BUILDING

- Additional program spaces include flexible Lifeguard Training Room, Triage Room, Lifeguard Support spaces, and facility storage.
- Combining the central lobby and check-in with the lifeguard office provides a secure entry and central viewing of pool deck for safety
- Improved opportunities for daylighting of interior community and staff spaces.

Executive Summary

FINDINGS & ACKNOWLEDGMENTS

If project scope is expanded to include Peck Avenue parking enhancements, total available parking stalls to support both options are noted below. The lower parking area currently has 69 stalls. However, the four ADA stalls are currently not compliant with ADA standards, the existing parking stalls are not adequately striped, and the road width does not accommodate appropriate fire truck access and turn radius.

- Option 1 – Parking with 90 ° stalls
 - Lower – 54 (with 3 accessible, 2 van accessible, and 13 EV capable spaces)
 - Upper – 58 (with 3 ADA stalls and 13 EV capable spaces)
 - Total – 112 stalls
- Option 2 – Parking with 90 ° stalls
 - Lower – 48 (with 2 accessible, 1 van accessible, and 8 EV capable spaces)
 - Upper – 58 (with 3 ADA stalls and 13 EV capable spaces)
 - Total – 106 stalls

Estimates of Probable Cost

In April 2024, cost estimates were generated for both options to complete the final task. In addition, several optional project enhancements were identified based on community requests, including expanded use of solar, phased construction, and Peck Avenue parking upgrades above the project site. We also provided estimated annual operating costs for both options.

• Option 1 – Renovation of Existing Pool and Building	- Pool	\$ 2,989,127
	- Support Buildings	\$ 10,503,908
	- Site/Infrastructure	\$ 6,432,807
	- Total Construction Cost	\$ 19,925,842
	- Project Soft Costs	\$ 8,038,389
	- Total Project Cost	\$ 27,964,231
• Option 2 – New Pools and Buildings	- Pool	\$ 9,870,545
	- Support Buildings	\$ 13,161,486
	- Site/Infrastructure	\$ 6,648,045
	- Total Construction Cost	\$ 29,680,076
	- Project Soft Costs	\$ 10,672,904
	- Total Project Cost	\$ 40,352,980
• Add-ons	- Solar Enhancements	\$ 1,376,349
	- Phased Construction (Option 2)	\$5,000,000
	- Peck Avenue Corridor	\$2,516,752
• Annual Operating Costs	- Current	\$ 653,000
	- Projected Option 1	\$ 802,277
	- Projected Option 2	\$ 1,802,369

It is important to note that the costs noted above are inclusive of all project costs in addition to the total construction costs. This includes costs for all project contingencies, City costs, design and engineering fees along with market escalation to the midpoint of construction.

Estimated Project Timeline

The construction start date for both options is currently assumed to be October 2026. Both options will have similar design phases with similar lengths; however, the time of construction will differ. Option 1 approximates 16 months of construction, and Option 2 approximates 18 months of construction. Because Option 1 is a remodel of an existing building, a structural analysis and report is required by the Division of the State Architect (DSA) prior to submittal of project. The preparation of this report would occur simultaneously with the Schematic Design phase. See table below for anticipated length of design and construction of project.

Schematic Design	2 Months
Design Development	3 Months
Construction Documents	3 Months
Plan Review & Approval	8 Months
Bid/Project Award	4 Months
Construction Administration	Construction Start Date October 2026
	16 Months for Option 1
	18 Months for Option 2
Occupancy	February 2028 for Option 1
	April 2028 for Option 2

HMC Recommendation

If the City provides direction to move forward, HMC recommends Option 2 for the following reasons:

Option 1 comes at a significant cost and does not expand the usability of the aquatic facility. Nor allow the City or MBUSD to expand their programs that need to be offered. This study found that there is not enough public water space within the City of Manhattan Beach to meet the community’s needs. Therefore, Option 1 does not address the key needs of the community despite calling for significant investment. It does not provide flexibility of programming with a single body of water at a single temperature.

Option 2, while at a higher cost, will meet the new needs of the City of Manhattan Beach and MBUSD. The two pool scheme allows for program flexibility and simultaneous use by different programs. It allows the flexibility to have two different bodies of water with varying temperatures. It expands the City’s potential to offer new programs, such as water polo with the larger 35M pool. The new building also better accommodates the modern needs of a secure and safe aquatics facility and provides a superior environment for the housing and training of lifeguard staff.

ACKNOWLEDGMENTS:

HMC Architects would like to thank the entire community of Manhattan Beach for the opportunity to perform this study and participation in the various community engagement activities which provided critical information to guide the process and conceptual design. More specifically, HMC would like to acknowledge the hard work, diligence, input, and time commitment of the City and MBUSD’s user group representatives. Without their dedication to the project, we would not have been able to dream and explore the options to provide the community with a facility that will greatly enhance life and recreation in the City of Manhattan Beach.

City of Manhattan Beach

Parks and Recreation:
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McCollum, Melissa
Sandoval, Jesus

Public Works:
Gamboa, Gil

Manhattan Beach Unified School District

Murakawa-Leopard, Dawnalyn
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Parks and Recreation Commission

McCarthy, Laurie
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04.26.2024
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HMC ARCHITECTS

Task One Site Analysis



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Project & Site Overview



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Overview

EXISTING FACILITY



VICINITY MAP

PROJECT TASK 1 OVERVIEW:

HMC has worked closely with the City of Manhattan Beach, Manhattan Beach Unified School District, and design consultants to review existing conditions at the 2 acre Begg Pool Facility, located at 1402 N Peck Ave, Manhattan Beach, CA 90266.

The following summary reviews the findings of the current existing facility and provides initial recommendations for two options. Option 1 includes recommendations to renovate the existing facility and Option 2 includes recommendations for a new facility.

HMC performed a field verification walk of the pool facility and site on August 24, 2023, to observe and document existing conditions. In addition, HMC’s consulting MEP and civil engineers, landscape, and aquatics teams also performed field verification walks and provided assessments of their disciplines as part of this study.

SITE OVERVIEW:

The current location of the Begg Pool facility falls under DSA jurisdiction. The property is owned by the Manhattan Beach Unified School District. The pool and facility were originally built to serve the adjacent middle school; however, over the years the school district partnered with the city of Manhattan Beach to offer programs for the community.

North of the parking is Begg Field. Polliwog Dog Park is east of the Begg facility. It is our understanding that this dog park may grow slightly to the west in the future. To the south, there is a road used for delivery of pool chemicals. South of that road is the Manhattan Beach Botanical Garden. These features are the extent of our limit of work boundaries.

There is a locker room building, a building for the City of Manhattan Beach staff, and a pool equipment building all adjacent to the pool. The office building and pool equipment building do not seem to be approved by DSA. There are also multiple storage containers on site, some of which are used to store items for the Begg pool facility.



Architectural Summary



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Architectural Site Analysis

EXISTING FACILITY

Upon arriving at the site, one of the first things HMC noticed was the poor vehicular access to the site. There is only one road that serves both as an entrance and an exit to the facility parking, this road was initially constructed to be a walkway for students from the old middle school located above the hill to walk to the pool facility. Over the years, it has become a vehicular access since there is no other road to parking. The parking is shared between the Begg facility and Begg fields, which may limit parking during an event. However, there is additional street parking on the road above. Currently, the existing facility has no pedestrian access from the road above. As part of Task 4, the design team has studied the best way to provide a Path of Travel (POT) to site. Getting a POT to the public right of way will be difficult and need to be reviewed early with DSA as a potential existing unreasonable hardship to get an exemption. There are accessible stalls adjacent to the existing Begg facility; however, they are missing the required signage. The pool enclosure is constructed of a chain-link fence which is not compliant per code. The chain-link fence is considered climbable and can be considered a safety risk. The pool deck is also warped exceeding the max slope allowed for POT.

BUILDING FINDINGS:

Locker Rooms

The existing locker rooms are outdated and have an inefficient layout, some of the lockers and access aisles are very tight and located in the center of the room, but there is a generous amount of clear floor space adjacent to lockers. With a different layout, some of this inefficient space can be recovered and used for a different purpose. There are also no accessible lockers. The existing lockers and benches are metal and are rusting. The floor is a concrete finish that can be slippery when wet.

The locker rooms only have exhaust, and the windows are open for natural ventilation. In conversations with some of the Manhattan Beach Unified School District (MBUSD) staff, it seems that sometimes wildlife will be found inside the locker room facilities.

Restroom Facilities

Restroom facilities and plumbing fixtures are also outdated, and they are not accessible. A plumbing fixture count study needs to be performed to confirm what the required quantity of fixtures should be. Currently, it seems there are not enough fixtures to meet code requirements.

Showers

A great portion of the shower faucets do not function. Some pipes are missing due to past renovations and others are falling apart due to age. Faucets and controls are also outdated so it can be costly to replace some of the parts to match. The metal panels in showers are rusting. There are no accessible showers.

Faculty Offices

Both restroom and shower facilities in offices don't meet accessibility requirements. In addition, the restroom and shower facility in the Women's Locker Room office currently don't work. Each of the faculty offices has a storage room adjacent to it. It was noted by Manhattan Beach (MB) Begg staff as well as MBUSD teachers that they need more storage. There are storage containers and small storage cabinets elsewhere on site to meet storage needs.

Equipment Rooms

There is currently one equipment room within the Begg building with new equipment that was added to replace previous equipment; however, the old equipment is still inside the room and hasn't been cleared out. The facility can potentially gain space if equipment is cleared from the room.

Ancillary Buildings

There are two ancillary buildings in addition to the Begg facility building. These two ancillary buildings house the pool equipment and Manhattan Beach staff offices. There are no records noting that these buildings are DSA approved. The pool equipment room is deteriorating and needs to be reconstructed to be brought up to current code. The MB Staff Office building needs more space to fit storage, equipment, and break area for staff. The staff area is occasionally used as a training room as well, so it needs the appropriate space and AV/IT requirements.

Parking and Access Road

The existing access road is currently less than 20 ft. wide, which is the minimum required width for a fire access road per Manhattan Beach Fire Department Requirements. The road needs to be widened and the paving reinforced to support the size and weight of a fire truck. This will lead to some retaining on the west slope. Since the existing road is also used for pedestrian access, a separate path for pedestrians is required. This pedestrian path will need to meet accessibility requirements.

The existing parking lot is approximately 27,300 SF and holds a total of 69 parking stalls, which includes 4 ADA stalls that are currently not compliant with ADA standards. The existing parking stalls are not adequately striped and the road width doesn't allow for fire access truck. In order to fit the appropriate fire lane width and turn radius, some parking stalls will be lost. A more in depth analysis, is provided in Task 4.



EXISTING FACILITIES



STAFF AREA

Building Analysis

DSA A#:	N/A
Building SF:	~5754 SF
Pool Size:	25 yds x 42 feet; Depth 3.5-4.0 ft (6 Lanes)
Construction Type:	N/A
Stories:	1-Story
Sprinklered:	Non-Sprinklered

Site Aerial

EXISTING FACILITY



- Existing road width doesn't allow for 2-way traffic
- Road not compliant for fire access
- No accessible path of travel to public right of way

- Existing parking doesn't meet current code and ADA requirements.

- Building needs seismic and ADA upgrades to meet current codes

- Pool equipment needs to be upgraded Pool deck not ADA compliant

- No records showing support buildings are DSA approved

Architectural Initial Recommendations

OPTION 1 - RENOVATION STUDY
OPTION 2 - NEW FACILITY STUDY

OPTION 1 - RENOVATION OF EXISTING FACILITY:

Because the facility falls under DSA jurisdiction, there is high likelihood that the entire facility will need to be renovated to current code. This will lead to extensive work where the Pool and Facility will need to be shut down while the facility is being renovated. This will affect classes offered by MB and MBUSD.

The design team recommends some grading to achieve the required road and pedestrian access. Site access will also need to be reviewed with DSA to see if the site qualifies for hardship. The parking needs to be appropriately striped for standard vehicles as well as accessible stalls. As part of the new code, EV Charging and EV Ready stations need to be added to parking.

The existing building needs extensive seismic upgrades to meet 2022 code cycle. The lockers and plumbing fixtures need to be sized accordingly based on occupancy and to meet accessibility requirements. The design team has explored different layouts to see how we can fit the appropriate number of fixtures within the current space. Light fixtures, power, and data also need to be considered.

These changes require new utilities that need to be sized appropriately to meet needs. It will be difficult to bring these new utilities into the existing building since the building has CMU walls.

HMC recommends a new smaller building structure to house pool equipment, storage, new mechanical, electrical, and data needs for the entire facility since there isn't enough space in the existing building to house these items. This smaller new building can also include some space for MB staff offices. As part of Task 4, the design team has explored different options to see what program needs can fit within existing building.

OPTION 2 – NEW FACILITY:

Similar to recommendations for the existing facility, site access must also be reviewed. This includes vehicular and pedestrian access. Parking is another concern brought to our attention. As part of the site design, the team would look at options to maximize available parking space that would include standard parking, accessible stalls, EV Charging and EV Ready stations.

The design team will be looking at different approaches to the design of a new facility that include building the project all at once and phasing the project in a way that would allow MB and MBUSD to continue their programs and classes. Phasing the project can be more costly due to the extended construction time and having different trades on site multiple times during construction activities to work on specific portions of site instead of all at once. Task 5 will look at these cost impacts to determine cost of phasing the project. The new building could be either a single building or a main building with a support building for equipment. As the team dives into Task 4, we will be looking at the most cost-effective solutions based on what is appropriate for the site.

Based on early conversations with the MB and MBUSD, it seems that two pools will best address programs and classes requested by the community. Once the information is gathered from Community Engagement, the design team will recommend the appropriate pool sizes that can serve the community but also fit within the boundaries of site.

The Design team expects that access to the site will be limited to the construction team during the construction phase. There will be no access to parking area below since the slope must be regraded and retained. Scheduled events for Begg pool and the adjacent Begg field and dog park are likely to be impacted.

Currently, when larger events at Polliwog Park are held there are already parking challenges, we expect ride-share options and carpooling will be heavily recommended to Park visitors during the construction phase of this project.

The California Building Code and City Municipal Code currently don't have any requirements on the total number of parking stalls that need to be provided. However, there are requirements for ADA and EV stalls which will be determined based on the overall total count provided. In both schemes, the design team is to maximize the number of stalls they are able to provide after right-sizing the building to the program established with the city and project partners.

DSA PROJECT REQUIREMENTS

Structural:

- Seismic Retrofit for Option 1
- Seismic bracing and attachment of equipment, fixtures, piping, conduit, ceilings, etc.

Fire Life & Safety:

- Widening and reinforcing of roads to allow for fire access
- Fire alarm and detection system
- Fire sprinkler system
- Fire hydrant locations and quantities

Accessibility:

- Upgrades to parking (Including but not limited to ADA stalls/ van-accessible/EVCS and EVSE/ Municipal required loading zones)
- Path of Travel (POT) upgrades to site. Foreseeable need to widen vehicular path and create safe/ accessible pedestrian access to the site and adequate signage. Proper pool deck slope.
- Code compliance for building accessibility. Including but not limited to locker layouts, showers, and restrooms.
- Provide compliant room identification at both interior and exterior conditions
- Provide accessible seating for outdoor sports areas

Other:

- Provide solar PV requirements for Option 2
- Provide Cal Green energy efficiency upgrades. I.e. replacement of windows, water efficient fixtures, light fixtures, etc



LOCKER ROOM



POOL MECHANICAL ROOM

Aquatics Summary



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Aquatics Site Analysis

EXISTING FACILITY

AQUATICS OVERVIEW:

Aquatic Design Group has been to the existing Begg Pool site three times including an in-depth guided review of the facility on Friday August 25th. The pool is located on Manhattan Beach Unified School District property in Polliwog Park. The City of Manhattan Beach operates the facility and City-run programs fill the pool roughly 75% of the time. Manhattan Beach Middle School students utilize the pool for their swimming curriculum throughout the school year.



BEGG POOL SITE

Aquatics Site Analysis (CTD.)

EXISTING FACILITY

AQUATICS SUMMARY:

The complex was built over 60 years ago and is well past its expected lifespan. Typical swimming pools are fortunate to last through two major renovations to be in good operating condition after 50 years. While the facility is well-loved in the community, it is time for its replacement.

There are multiple code issues at the facility that require a significant capital investment to rectify. These include:

- The pool deck slope does not meet code, which requires a constant slope away from the pool to a drain at no less than 1% and no greater than 2%. The current decks feature slopes in excess of these requirements.
- The pool deck is cracked and features many areas where bacteria, mold, etc. can grow. Code requires a consistent smooth finish for a minimum of four feet around the entire perimeter of the pool. (See Existing Non-Compliant Pool Decks images to the right.)
- There is currently only one set of panic hardware on gates. The site requires another means of egress and ingress to be code-compliant.
- The perimeter fence does not have a curb and is climbable, so it is not compliant.
- Staff reports that excessive water back up the deck drains, which is not code-compliant.
- The facility features many ADA violations including path of travel and lacks permanently installed primary ADA access.
- The facility does not feature proper code-required signage.

- Staff reports that the showers in the locker rooms are problematic and difficult to keep operational. During the August 25th site investigation, the showers in the male and some in the female locker rooms locker were not operational.

In addition to the code issues, the facility is limited in what programs it can offer. The pool itself is 25-yard x 6-lane with depths that range from 3’-5” – 3’-9”. This size pool can accommodate swim lessons, physical educational programs, and shallow water fitness programs (lap swimming, water walking, aerobics, etc.) quite well. However, it is too shallow to accommodate competitive swimming and springboard diving, and is too shallow and small to accommodate water polo. Different programs require different water temperatures, so a single body of water presents another challenge.

The six lanes are also insufficient to accommodate the community's demand. There is a general lack of water space within a 10-mile radius of Manhattan Beach, forcing those who need it to face long drives in bad traffic. There is sufficient demand to justify a much larger facility with no expectation of reduced use.

Additionally, the existing plaster finish is 15 years old and needs to be replaced in the near future. (See Existing 6-Lane All-Shallow Pool Images to the right.)

The pool equipment is aging and will need to be replaced in the near future.

Specifically:

- The pool received new mechanical equipment as part of a renovation in 1997. According to staff, the majority of the equipment is the same today including the filter media which has never been replaced.

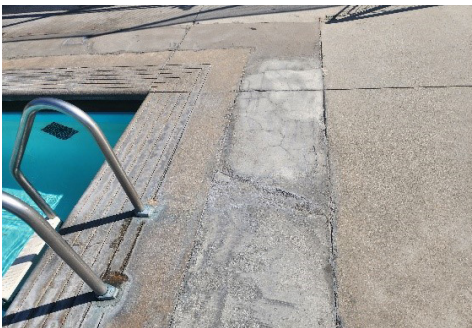
- The Chemtrol water chemistry controller is 10 years old and does not have many of the features that modern models offer.
- The pool boiler has been replaced three times and is currently 7 years old. It is also an inefficient natural gas boiler and could be replaced with a much more efficient model.
- The pool uses a series of three-horse-power pumps. These have been replaced three times since the 1997 renovation and should be replaced with a single, larger more efficient flooded suction pump. (See *Existing Pool Mechanical Room and Equipment* Images to the right.)

The site of the existing facility is centrally located and serves the community well. While an alternate site would prevent the Division of State Architect review and its associated costs and process, one of the core uses of the facility, serving the Manhattan Beach Middle School, would be lost. The site certainly has its challenges, including vehicular access to the pool, adjacent dog park and sport fields, and a shared, steep, one-lane road. While the existing pool has plenty of room for its size, providing a two-lane road with more gradual slopes and enlarging the pool and / or adding a second body of water may present challenges in terms of parking and overall park layout.

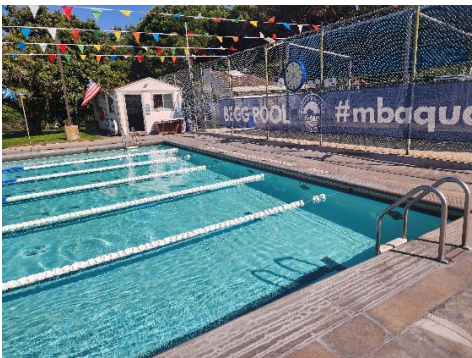
There is a desire to renovate or replace the existing pool with a similar program and add a second, larger body of water that could house swim practices (and potentially small meets), water polo practices (and potentially small meets), and have the capacity for deep water programs, more lap swimmers, and more robust programming opportunities. Such a facility would be a significant upgrade over the existing and would create a multi-generational aquatics complex for all residents of Manhattan Beach without drastically increasing traffic or creating a nuisance for nearby houses and residents.

Adding a second body of water would allow a warmer small pool for recreation and a cooler large pool for sports and competition. The city could also use this additional space to generate revenue.

To date, Los Angeles County and the state of California have not banned natural gas from being used on public swimming pools. There have been many discussions and pressure to do so but no statute, code, or law has been enacted. Aquatic Design Group (ADG) will work closely with the design team, the City, and the District, to look at the most cost-effective means of reducing the carbon footprint of this project including a combination of alternative heat sources for the swimming pool. ADG will also take steps to provide the required infrastructure and / or space allowance(s) as part of this project for future heating solutions as technology and codes catch up with the shared desired to be carbon neutral.



EXISTING NON-COMPLIANT POOL DECKS



EXISTING 6-LANE ALL-SHALLOW POOL



EXISTING POOL MECHANICAL AND EQUIPMENT ROOM

Aquatics Scope of Work

CASE STUDIES

35-METER POOL EXAMPLES:



FRESNO HIGH SCHOOL (FRESNO)

FACILITIES WITH SIMILAR PROGRAMS:



GAUCHE PARK (YUBA CITY)

FACILITIES WITH SIMILAR PROGRAMS:



WESTLAKE HIGH SCHOOL (WESTLAKE VILLAGE)



MORRO BAY HIGH SCHOOL (MORRO BAY)



MARGUERITE AQUATIC CENTER (MISSION VIEJO)



ELK GROVE AQUATIC CENTER (ELK GROVE)

Civil Summary



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Civil Site Analysis

EXISTING FACILITY

CIVIL OVERVIEW:

The original facility was constructed in the 1950’s and has been renovated several times since then. It is likely that much of the infrastructure associated with the facility has served its useful lifespan and is subject to replacement, including water, sewer, and storm drain facilities. The site is currently served by a 4” cast iron water service from Peck Avenue. Plumbing records show a 2.5-inch cold water service at the east side of the locker-room. An existing 14-inch water main runs north-south east of the facility within a 15-foot easement. Records also indicate that a 6-inch reclaimed water is located within Peck Avenue to the west. Plumbing records show a 4-inch waste line at the east side of the locker-room. Records indicate that an existing 6-inch sewer serves the facility and connects to an 18-inch main line in Polliwog Park to the east within a 10-foot easement. Another sewer lateral is shown just north of the facility in the parking lot, also connecting to the 18-inch sewer main east within Polliwog Park. Drainage from the site runs from west to east.

Note that existing utilities were not readily noticed on previous site visits and the above information is based upon a review of agency provided record plans.

We will need to better understand utility demand in order to coordinate appropriate wet utility service criteria.

Separate water services for landscape irrigation and domestic uses should be considered.

Site drainage is problematic and in need of improvement. There is noticeable erosion and sediment at the southwest corner behind the locker room. It appears to be sourced from the slope to the west.

No storm water detention or water quality BMP’s were noticed. The adjacent park acts as a detention pond for the region. The on-site city engineer indicated that Maxwell Drywell systems were used on recent nearby project and the City approves of these systems. Infiltration testing will need to be performed at proposed depths to confirm viability of this type of infiltration system.

The existing parking lot is in fair condition showing block cracking and deterioration. We recommend full replacement.

The access road is steep and allows for one-way traffic only. We recommend a wider access road to accommodate two-way traffic and safe pedestrian access.



EXISTING FACILITY



SEDIMENT EROSION

Civil Initial Recommendations

OPTION 1 - RENOVATION STUDY
OPTION 2 - NEW FACILITY STUDY

OPTION 1

Option 1 proposes to renovate the existing facility. This option will utilize much of the existing site. We recommend to update the infrastructure that serves the facility as the existing infrastructure has served its useful life. This includes site drainage improvements to correct deficient drainage on-site. Depending on the extent of new/replace impervious surfaces, permanent Low Impact Development (LID) BMP’s may be required for treatment and hydro-modification compliance. Drywells have been used on adjacent projects and may be suitable for this project site as well.

The current parking lot serves both the pool and the baseball field to the north. The parking lot should be resurfaced and the layout reviewed to accommodate a new access drive and ADA path of travel from parking. Vehicle and pedestrian access off Peck Ave are the most important site improvements. Approximately 22-feet of vertical grade separate Peck Avenue and the project site. Vehicle access should provide 2-way access to the site. Pedestrian access should be separate from the vehicle access in order to provide a safe and accessible path of travel. This path can be accomplished by providing +/- 280 feet of ramp at 8%, with approximately 9 - 10 landings. This proposed design will be explored in Task 4.

OPTION 2

Option 2 proposes a new aquatics center. A new facility will require new infrastructure and site grading. A new site will include a new access drive, pedestrian path, parking, utilities, etc. Storm water compliance will be required to meet agency requirements. Drywells have been used on adjacent projects and may be suitable for this project site as well.

Note: It is recommended that City and School District perform a Geotech and Topographic survey prior to commencement of Design phase.



HILLSIDE BETWEEN EXISTING FACILITY



SITE DRAINAGE

MEP Summary



HMC
Architects

MEP Summary (CTD.)

EXISTING FACILITY

OVERVIEW:

HMC Architects requested that Design West Engineering (DWE) join an assessment team for a facility walk at Begg Pool in Manhattan Beach, California. On this walk, we reviewed the existing MEP systems and asked City staff their desired outcome of the renovation. The design team also reviewed the current use of the facility and existing issues.

The design team is currently pursuing two options at this preliminary design stage. Option 1 is to renovate the existing facility in order to modernize the space as well as resolve numerous issues that city staff are facing. Option 2 is to demolish the existing building and pool infrastructure in order to replace it with a new facility. This report intends to investigate the mechanical, plumbing, and electrical measures it may take to accomplish both options.



BEGG POOL SUPPORT BUILDING

MEP Site Analysis - Mechanical

EXISTING FACILITY

EXISTING MECHANICAL EQUIPMENT DESCRIPTIONS:

The facility appears to be served by mechanical equipment that is outdated and, in many cases, no longer functioning. Please see below for a description of each major HVAC component.

Exhaust Fans:

The locker room building is served by various exhaust fans. The majority of exhaust air is provided within the locker area itself. There appear to be some exhaust fans that serve areas outside of the locker room, such as restrooms.

All exhaust fans are roof-mounted down blast fans. While the design team did not have roof access, the exhaust fans appeared to be in working order from the distance the design team was able to view them.

Non-function Heating-only Make-up Air Unit:

Within the mechanical room there is a non-functioning abandoned heating only make up air unit. City staff stated that the unit has been nonfunctional for many years, meaning the facility does not have heating or make-up air.

As a temporary measure, city staff has been using operable windows to provide make-up air to ensure that the exhaust air does not cause the room to become negatively pressurized.

EXISTING MECHANICAL DEFICIENCIES:

Lack of Make-up Air and Heating:

As stated within the existing mechanical equipment descriptions section, there is a non-functioning make up air unit within the mechanical room. This unit previously provided heating through a gas furnace and make-up air through fresh air. Without this functional unit, the facility does not have sufficient heat or air flow.

Operable Windows as Make Up Air:

While using operable windows to supply make-up air may resolve the potential room pressurization issue, this causes other complications. Namely, all make up air now lacks filtration. Filtration of fresh air for building occupants is code-mandated and must be of a particular filtration rating. Based on the current code cycle, filtration must have a minimum rating of MERV-13.

Insufficient filtration can cause issues for the building occupants. Please see the following for a list of the most impactful.

Poor Indoor Air Quality (IAQ): Without filtration, indoor air quality can suffer. Particulate matter, including dust, pollen, and other allergens, can circulate freely in the indoor environment. This can lead to allergies, respiratory problems, and discomfort for building occupants.

Odor Issues: Without filtration, odors from both indoor and outdoor sources can linger in the indoor environment, leading to discomfort and dissatisfaction among occupants.



EXISTING MECHANICAL EQUIPMENT



(FIGURE 1) OPERABLE WINDOWS FOR VENTILATION

MEP Site Analysis - Plumbing

EXISTING FACILITY

EXISTING PLUMBING EQUIPMENT DESCRIPTIONS:

Plumbing Fixtures:

The facility is served by a number of different plumbing fixture types. The facility includes public showers, water closets, lavatories, janitors sink, and drinking fountains.

Although the fixtures are overall operable, they are outdated and often fail, likely because of broken flush valve seals.

Water Heaters:

The facility is equipped with two water heaters that appear to be newer than the rest of the plumbing components within the building (Figure 2). Both water heaters are Rheem Model # GNU100-270. Each water heater has a 100-gallon water capacity with a gas input of 270,000 BTUH. Based on the serial numbers, these water heaters appear to have been manufactured in 2016, making them approximately 7 years old. The average life span for a water heater is between 12-15 years. The water heaters appear to be in good condition and are appropriately sized to serve the existing facility.

Abandoned Water Storage Tank:

Within the mechanical room, there is an abandoned water storage tank (Figure 3). This tank is no longer connected to the water heating system. The tank is heavily corroded and cannot be reused. This storage tank will either need to be abandoned in place or removed from the mechanical room.

Plumbing Piping:

Cold Water piping: The cold-water piping within the facility is heavily corroded. The piping material appears to be galvanized steel, which is notorious for heavy corrosion over time. The corrosion tends to build up within the internal portion of the pipe. This causes a number of performance issues, including reduced water flow, higher water pressure demands, pipe failures and plumbing fixture failures.

Hot Water Piping: The hot water piping within the mechanical room appears to be partially replaced. This likely occurred when the water heaters were installed. Based on the condition of the cold-water piping, it stands to reason that the original hot water piping that was not replaced is in a similar corroded condition and all of the same complications can arise as described above.

Waste and Vent Piping: The waste and vent piping were not readily observable without destructive measures. Age alone would warrant some concern of pipe degradation, but it is likely less concerning as compared to the cold and hot water piping.

Plumbing Utilities:

The facility has various utilities available at the site. These utilities include cold water, gas, and waste.

The cold water enters the building within the mechanical room. The cold-water main is 2-1/2” which should be more than sufficient to serve the fixtures within the facility.

The gas also enters through the mechanical room. The main gas size appears to be 3” in diameter. This gas size suggests that the system is a low-pressure gas system back to the meter and should have sufficient capacity to serve the water heaters and furnace.

The main waste connection location to the city waste system is currently unknown. City staff reported that they have attempted to hire plumbing contractors to use a camera to determine the connection point. These attempts were reported to be unsuccessful.

EXISTING PLUMBING DEFICIENCIES:

Corroded and Failed Cold and Hot Water Piping:

As stated in the plumbing piping description above, the facility is plagued by heavily corroded cold and hot water piping. This issue is by far the largest concern for the facility from a plumbing perspective. City maintenance staff reported this to be their largest nuisance and requires constant attention. Please see Figure 4 to the right for an example of pipe corrosion at the facility.

Unfortunately, the only way to resolve this issue would be to replace the plumbing piping throughout the facility. As one could imagine, this is a large undertaking and will require a great degree of demolition to remove and replace all of the piping.

Failed Plumbing Fixture Seals:

In addition to the failed piping, some fixtures also tend to fail, specifically at the seals within the flush valves. This issue is likely directly related to the corroded piping. The corrosion within the piping can build up and break off in small chunks. These chunks can then travel to the plumbing fixtures and damage the seals. These seals can be replaced without the need to replace the fixtures. Figure 5 to the right shows multiple fixtures with out of order signs due to failed components.



(FIGURE 2) EXISTING WATER HEATER



(FIGURE 3) ABANDONED STORAGE TANK



(FIGURE 4) EXAMPLE OF PIPE CORROSION



(FIGURE 5) OUT OF ORDER FIXTURES

MEP Site Analysis - Electrical

EXISTING FACILITY

EXISTING ELECTRICAL EQUIPMENT DESCRIPTIONS:

The facility appears to be served by electrical equipment that is outdated and, in many cases, may no longer provide overcurrent protection. Please see below for a description of each major electrical component.

Main Electrical Service:

The main electrical service is an outdoor 200A, 120/240V, 1ph system (Figure 6) fed via a pole mounted utility transformer located on N Peck Ave. A 225A, 120/240V, 1ph distribution panel serves the entire site via (2) 150A wire breakers (Figure 7). The current peak demand is 10kW, which is based off 12-months utility bills. The existing service has approximately 20kW of capacity available.

Interior Panelboards:

Both locker rooms are served by (2) Westinghouse recessed panelboards (Figure 8). (1) 100A panelboard serves the remaining Boiler room equipment (Figure 9). The Boiler room MCC backboard appears to be abandoned. The boiler panel board serves the (2) newer water heaters, locker room ventilation fans, and miscellaneous circuits.

All interior panelboards are fed via panel ‘LSB’ in the Women’s locker room (Figure 10).

Pool Equipment Panelboard:

A 125A pool equipment building panel board serves all pool equipment and adjacent office building 40A sub-panel and dog park lighting (Figure 11).

Site Lighting:

The parking and front entry areas do not appear to have lighting fixtures covering these areas. The pool area is lit via 15’ pole mounted fixtures and exterior wall packs mounted on locker room building. Areas around the back perimeter of locker room building do not appear to be covered with lighting fixtures. Automatic lighting controls could not be identified.

Interior Lighting:

The locker room lighting fixtures appear to be original and utilize LED/CFL screw-in type bulbs. The lighting fixtures over the shower are 1x4 florescent type fixtures. No automatic lighting controls were present in these areas (Figure 12).

Fire Alarm System:

The existing fire alarm system is original and does not appear to be functioning (Figure 13). The fire alarm system make, and model could not be identified.

EXISTING ELECTRICAL DEFICIENCIES:

Panelboards:

Most of the electrical equipment appears to be original and in critical condition. Locker room building panel board circuit breakers are covered by duct tape and corrosion. It is possible that some of the original circuit breakers may not function as designed due to age and corrosion. The pool equipment building panelboard has surface corrosion and may possibly be overloaded when most circuits are in use.

Interior Lighting:

Lighting fixtures in locker room areas did not appear to be IP65 rated. Moisture can infiltrate the existing lighting fixtures and wiring, posing a shock hazard.

Emergency Lighting:

No exit signs or emergency lighting were present during the site investigation. With the current occupancy load, the site requires emergency lighting along the path of egress.

Fire Alarm system:

The existing fire alarm devices need to be replaced and made accessible. A fire alarm test is required to ensure the functionality of this life safety system.



(FIGURE 6) SITE ELECTRICAL SERVICE



(FIGURE 9) BOILER ROOM PANEL



(FIGURE 11) POOL EQUIPMENT BUILDING PANEL



(FIGURE 7) SITE ELECTRICAL DISTRIBUTION PANEL



(FIGURE 10) WOMEN’S LOCKER ROOM PANEL



(FIGURE 8) MEN’S LOCKER ROOM PANEL



(FIGURE 12) LOCKER ROOM INTERIOR LIGHTING FIXTURES



(FIGURE 13) EXTERIOR FIRE ALARM PULL STATION

MEP Recommendations

OPTION 1 - RENOVATION STUDY

The City would like to explore the option of modernizing the existing facility to resolve performance issues. Please see below for the mechanical, plumbing, and electrical recommendations to pursue this effort.

Mechanical Recommendations:

Ventilation – New Dedicated Outside Air Unit – Gas Fired

As described in the existing conditions, there is an existing heating-only make-up air unit that no longer functions. In order to provide both heating and ventilation to the facility, the design team recommends that the existing unit is removed from the mechanical room and that a new unit is provided in the same location. The new unit should be capable of providing ventilation for the entire facility as well as filtration and heating. The heating can be accomplished through a furnace within the unit, utilizing the existing gas piping within the mechanical room.

Duct work may need to be rerouted depending on the current unknown routing. In addition, we need to analyze code-required ventilation rates and the existing duct work to confirm the appropriate size to accommodate these values.

Exhaust:

While the design team was unable to closely inspect the existing exhaust fans, they did appear to be in acceptable condition. With that being said, the design team recommends that exhaust fans are inspected for proper function and total quantity of air flow. These points can be used to determine if they are sufficient for code-required ventilation rates.

Conditioning – Split Systems:

Conditioning is not necessarily required, but the City can pursue if cooling is desired for any particular space. If desired, the design team recommends using small split systems, which can provide cooling to specific rooms or spaces without the need to provide large equipment. In addition, electrical demand and up-front equipment costs tend to be fairly low when compared to larger mechanical systems.

Plumbing Recommendations:

Replace Cold and Hot Water Piping:

As mentioned in the plumbing deficiencies section, highly corroded cold and hot water piping is the greatest problem plaguing the plumbing system. The existing pipe material appears to be galvanized steel which is notorious for corroding over time leading to reduced water flow, greater water pressure needs, pin hole leaks, and even complete pipe breaks and failures.

In addition to the issues described above, corroded water piping can cause damage to the downstream plumbing fixtures. Specifically, it can cause damage to the seals within plumbing flush valves. When the seals become damaged, they can allow water to leak through and even stop the function of the flush valve completely.

Considering these issues, if the facility is renovated, the design team strongly suggests that the cold and hot water piping be demolished back to the mechanical room before it continues underground back to the utility connection at the street. The City would then need to install new water lines from that point onward.

As one can imagine, this undertaking can be extremely destructive and costly. Plumbing piping is often routed within walls, ceiling spaces, and underground. To access and remove these existing lines, it would require at least partial demolition of the walls, ceilings, or underground surface where the pipes are located.

Update Fixtures:

If a renovation of the facility is pursued, the design team would highly recommend replacing the existing fixtures with new updated fixtures. The fixtures that currently exist are outdated and, in many cases, have failed.

Due to the age of the fixtures, coupled with the damage likely cause by the corroded water piping, it stands to reason that the facility will continue to experience maintenance issues with fixtures if they are not updated along with the other building renovations.

In addition to functionality, updated plumbing fixtures can also save water and costs down the line. Modern plumbing code requires that new fixtures have a maximum allowable water flow rate. Please see the list below for the water flow requirements of various common fixture types.

- Non-residential Water Closets – Shall not exceed 1.28 gallons per flush.
- Non-residential Urinals – Shall not exceed 0.125 gallons per flush.
- Non-residential Lavatory Faucets – shall not exceed 0.5 gallons per minute.
- Non-residential Shower Heads – Shall not exceed 1.8 Gallons per minute.

Replace Existing Water Heaters:

As stated in the equipment description section, there are two newer water heaters that serve the facility, likely installed in 2016. Each water heater has a 100-gallon water capacity with a gas input of 270,000 BTUH.

Water heaters typically have a lifespan of around 12-15 years. Considering the design efforts associated with this endeavor will take some time to gain approval, the design team recommends replacing these water heaters during renovation because they will be reaching the end of their life span by the time of construction.

The existing water heaters appear to be adequately sized for the amount of fixtures within the facility, therefore the replacement water heaters would likely be the same size with similar capacity.

Electrical Recommendations:

New Electrical Service:

As described in the existing conditions, the facilities’ current electrical service may not have the capacity or correct voltage to support larger pool and HVAC equipment. The existing building wiring and panelboards are past their useful service capacity. A new larger electrical service would provide the electrical capacity required to service new pool equipment, HVAC units and any future building equipment.

New interior panelboards and circuits:

As described in the existing conditions, the existing building wiring and panelboards have gone past their useful service capacity. Circuit breakers that appear to be corrosive may not operate as intended and may cause fire damage. GFCI receptacle or circuit breakers were not installed in wet location areas and may cause a shocking hazard. Providing new panelboard, circuit breakers, circuit wiring, and pathways will ensure the building’s electrical infrastructure is functioning properly and per code requirements.

New interior lighting fixtures and circuits:

As described in the existing conditions, the existing building’s lighting fixtures in the locker room areas did not appear to be IP65 rated and pose a shock hazard. Providing new lighting fixtures, lighting controls, circuits and pathways will ensure the building’s lighting system is functioning properly and per code requirements.

New emergency lighting fixtures and circuits:

As described in the existing conditions, the existing building’s lack of emergency lighting may cause egress issues when patrons exit the building. Providing new emergency lighting fixtures, exit signs, circuits and pathways will ensure the building’s emergency lighting system is per code requirements.

New site lighting fixtures and circuits:

As described in the existing conditions, the parking and front entry areas do not appear to have adequate lighting. New pole mounted fixtures to cover these subject areas will ensure safe egress to the exterior of building.

New building fire alarm system and circuits:

As described in the existing conditions, the existing fire alarm system is original and does not appear to be functioning. Code requires a new fire alarm system via pull stations and strobes to cover the building in an event of a fire.

MEP Recommendations

OPTION 2 - NEW FACILITY STUDY

The City may also pursue the option to replace the existing facility with a new building, pool, and other accommodations. The following section describes the recommendations for the mechanical, plumbing, and electrical systems if this option is pursued.

Mechanical Recommendations:

The new 2022 California Energy Code has made it more difficult for newly constructed buildings to pass their standards when gas is used for mechanical equipment. While the facility has gas available, it may be difficult to meet energy standards when used. Unfortunately, this cannot be determined at this early stage unless we perform substantial design efforts. Considering this, the design team presents two recommendations for mechanical equipment, namely units utilizing gas and units that do not require gas. If Option 2 is pursued, the design team can determine which option suits the city best once the design is developed further.

The new building will likely have similar accommodations to the existing facility, such as locker rooms, showers, restrooms, etc. These space types have code-mandated exhaust requirements based on the square footage of each room or ,in some cases, the quantity of fixtures. These values tend to be much greater than the requirements of more traditional spaces, such as offices. A dedicated outside air unit (DOAS) will meet the increased ventilation demand and is ideally suited for this situation. A DOAS is an HVAC system designed to provide a controlled and efficient supply of outdoor air to a building. It plays a crucial role in maintaining indoor air quality by delivering fresh, filtered, and conditioned outdoor air while also managing humidity and temperature. This unit is specifically designed to handle a higher quantity of outside air than a traditional HVAC unit. In addition, DOAS units often provide tempered air rather than air for traditional space cooling or heating. Tempered air is heated or cooled to a room neutral temperature (approximately 75 degrees for most spaces) rather than over-cooled or over-heated air that a traditional system would provide.

This is the ideal situation for locker rooms, showers, and restrooms because the total quantity of air entering these spaces will need to be removed due to the exhaust requirements. In other words, there is no need to provide anything other than tempered air to these spaces because the code-mandated exhaust rates will require that it is immediately removed.

Manhattan Beach has very temperate weather, so we recommend forgoing cooling capabilities.

With that being said, A DOAS unit can provide heat using either a gas furnace or heat pump system. There are pros and cons to each system type. The design team recommends using gas since it is already available at the site. As mentioned previously in this report, the largest determining factor will be California Energy Code requirements.

The current code cycle requires a filtration rating of MERV-13 or greater for occupiable spaces. Either option will provide proper filtration.

Ventilation Recommendation 1– New Dedicated Outside Air Unit – Gas Fired

The facility currently has a gas line routed to the existing mechanical room. Considering this, it would be ideal from a performance perspective to utilize this gas line and provide a gas fired furnace within the DOAS.

Gas systems are extremely efficient and require a smaller equipment footprint. Other systems of heating, such as heat pumps, require some form of outdoor equipment in order to reject the heat to the atmosphere. This equipment will be housed inside of a mechanical room, but these unit types can be installed in both indoor and outdoor variations and are flexible to meet the desires of end user.

In addition, gas heating has lower electrical requirements. If gas is not used, electricity must compensate for the lack of gas in one way or another (depending on the system type chosen).

Ventilation Recommendation 1– New Dedicated Outside Air Unit – Heat Pump

As mentioned in this report, new California Energy Code requirements make it difficult for newly constructed buildings to utilize gas equipment. Essentially, all new buildings must be modeled on energy calculation software. This software inputs factors such as building construction, window efficiencies, lighting, plumbing equipment, and mechanical equipment to calculate the potential energy use of the building. This potential energy use is then weighed against a baseline to determine if it passes or fails. Recent code introduced a penalty for using gas fired equipment which requires that all other components of the building compensate for its use. While extra energy efficiency is often desirable, it can be costly to increase the efficiency of the walls, windows, roof, etc., and it may not make sense for all projects.

Considering this, the design team would like to provide a recommendation for a DOAS unit that does not utilize gas for heating. If gas is not used, a DOAS can utilize heat pump technology to provide heating. A heat pump is a versatile and energy-efficient HVAC system that can both heat and cool indoor spaces. It operates by transferring heat from one location to another, making it an effective way to regulate indoor temperatures in a more eco-friendly and cost-effective manner. We will not need to provide cooling, so we can use a heating only pump unit.

A heat pump requires heat rejection to the outdoors, so we will need to install an outdoor condensing unit to reject the cool air removed from the indoors to the outdoors.

A heat pump can utilize various mediums to accomplish the heat transfer, the two common water or refrigerant. In either case, the medium will be piped between the indoor heating coil (within the DOAS) and the outdoor condensing unit. The cold air from inside the building is essentially transferred to the water or refrigerant and then moved outdoors where it is rejected into the atmosphere through the condensing unit.

Water is a more efficient medium, although there is typically an extra piece of equipment required, a water storage tank, to allow the water more time to heat.

Exhaust

While the DOAS unit will be responsible for bringing in filtered and heated outside air, the exhaust system will be responsible for removing air to ensure that the code-mandated exhaust rate is maintained. In addition, exhaust fans will be responsible for maintaining the correct room pressure within any given space.

There are two broad categories of exhaust fans: roof top-mounted and in-line exhaust fans, which are mounted above ceiling spaces. The design team recommends roof top exhaust fans, if acceptable to the building owner, as they are easily accessible for maintenance purposes. The only downside to this style of equipment is aesthetics, because it is visible on the roof. If this is a priority, then the City can pursue in-line style exhaust fans. There are not any noticeable performance discrepancies between the two exhaust fan styles.

Air distribution of the exhaust and the make-up air from the DOAS are important factors for the locker room and shower areas. The design team recommends placing the majority of exhaust grills above or near the shower areas while placing the make-up air diffusers from the DOAS on the opposite side of the space. This will allow for fresh air to be drawn across the entire room while removing air from the area where is most critical, namely, the shower area.

Community Room Conditioning - Dedicated Fan Coil and Condensing Unit

At this preliminary stage of schematic design development, the design team is considering adding a community room to the newly constructed building. This space type differs in use and occupancy when compared to the remaining potential rooms, mainly in that it will occupy a large quantity of people during all times of the year. Considering this, the design team recommends providing a dedicated cooling and heating unit for this area.

MEP Recommendations (CTD.)

OPTION 2 - NEW FACILITY STUDY

Mechanical Recommendations:

For aesthetic purposes, the design team recommends pursuing a split system in which the indoor unit is a fan coil while the outdoor unit is a condensing unit. This equipment type will not require equipment to be mounted on the roof, providing a better overall look to the building. There are some potential downsides to pursuing this equipment type. Theses fan coils are typically installed within the ceiling space, making maintenance more challenging. In addition, noise from the equipment can sometimes be an issue, but this can be mitigated by proper design and selection of these units.

Pool Equipment Room Ventilation

The newly constructed building, will also provide a new equipment room would. There are a few potential situations based on the layout of the room. Namely, if the pool chemicals house in the same room as the equipment. Typically, these are separated, so this recommendation will assume this is the case. If separate rooms, the design team recommends providing a roof top-mounted exhaust fan to provide ventilation only to the equipment room. This will help keep heat and remove the potential minimal chemicals within the air, which will benefit maintenance staff that may need to work within the space. The design team recommends that the duct work and exhaust fan components be constructed of aluminum material. Aluminum tends to resist corrosion brought on by pool chemicals and will provide a longer life span than traditional duct work materials, such as galvanized steel.

Plumbing Recommendations:

As discussed within the mechanical recommendations section, the 2022 California Energy Code introduced penalties for newly constructed buildings that use gas. This issue will also affect the type of recommended water heaters. There are two types of water heaters that the design team typically recommends, namely, ultra-low NOx gas-fired water heaters or water source heat pump water heaters. Similar to the mechanical equipment recommendations, this decision will be largely decided by compliance with the energy model, which cannot be determined at this stage of design. Considering this, the design team has elected to provide both equipment options.

Ventilation Recommendation 1– Ultra-low NOx Gas-Fired Water Heater

If the energy modeling allows for use of gas at the new facility, the design team recommends utilizing Ultra-low NOx gas-fired water heaters. An ultra-low NOx gas-fired water heater is a water heating system that is designed to significantly reduce the emission of nitrogen oxides (NOx) during combustion. NOx emissions are a major contributor to air pollution and can have harmful environmental and health effects. Ultra-low NOx water heaters are engineered to meet strict emissions standards and are typically used in areas with stringent air quality regulations. The greatest upsides to pursuing this equipment type will be low emissions, greater efficiency when compared to traditional gas-fired water heaters, and quick and efficient water heating.

Ventilation Recommendation 2– Water Source Heat Pump Water Heater

If the energy modeling software does not allow for use of gas at the newly constructed facility, the design team recommends pursuing a water source heat pump (WSHP) water heater. A WSHP water heater is a highly efficient and versatile heating and cooling system that provides both hot water for domestic use and space conditioning for heating and cooling. It operates on the same principles as other heat pump systems but is primarily designed for water heating applications. In this specific case, it will be used for domestic hot water heating only.

There are a number of benefits and downsides to pursuing this equipment type. Some of the benefits are as follows:

- Energy Efficiency: WSHP water heaters are very energy-efficient, as they rely on the stable temperature of the water source, which is typically more moderate than outdoor air temperatures.
- Environmental Friendliness: WSHPs are environmentally friendly, as they reduce greenhouse gas emissions and energy consumption compared to traditional water heating systems.
- Consistent Performance: The use of a stable water source temperature ensures consistent and reliable system performance year-round.

Some of the down-sides are as follows:

- Water Storage Tank: WSHPs often require a water storage tank to function optimally. This is due to the fact that they tend to eat water slower than traditional gas-fired equipment. The storage tank allows for readily accessible water to be available during times of peak hot water use. Space must be provided for this water storage tank.

- Outdoor Condensing Unit: WSHPs require use of an outdoor condensing unit to reject heat to the atmosphere. The only downside to this is that physical space must be provided for this piece of equipment.

Plumbing Fixtures:

With the construction of a new facility, the design team recommends providing new pluming fixtures that focus on water conservation and low maintenance requirements.

Water Conservation:

The 2022 CalGreen code mandates various water conservation codes that must be upheld for various fixture types. The following list includes common fixture types and their water use limitations:

- Non-residential Water Closets – Shall not exceed 1.28 gallons per flush.
- Non-residential Urinals – Shall not exceed 0.125 gallons per flush.
- Non-residential Lavatory Faucets – shall not exceed 0.5 gallons per minute.
- Non-residential Shower Heads – Shall not exceed 1.8 Gallons per minute.

Naturally, the design team recommends that all fixtures meet or exceed these code requirements.

Low-Maintenance Fixtures:

In addition to the water conservation measures, the design team also recommends fixtures that tend to be low maintenance. With this in mind, the design team recommends providing metered faucets on all lavatories with touchless operation. Touchless operation can come in various forms, namely, battery-powered, hardwired, or solar-powered. To reduce maintenance, the design team recommends pursuing either hard-wired or solar-powered faucets. It should be noted that the solar-powered options do not require actual sunlight in the space, but rather they are powered through artificial lighting in the room. Both of these options allow for continuous operation of the touchless faucets without regular staff intervention.

MEP Recommendations (CTD.)

OPTION 2 - NEW FACILITY STUDY

Electrical Recommendations:

As discussed within the electrical recommendations section, the new electrical service will be required to accommodate the new pool equipment, HVAC units, lighting circuits, and electrical devices. The new main switchboard shall be a 600A, 277/480V, 3ph, 4W service. The electrical service shall be located indoors to extend the life of the equipment. The new service shall have a 25% spare capacity for future growth. SCE coordination shall be provided to locate proposed utility pad mounted transformer and other structures required by Utility.

The design of the new electrical systems shall conform with the currently adopted editions of the following codes:

- 2022 National Electrical Code (NEC)
- 2022 California Energy Codes, Title 24 (CEC)

Electrical pathways, feeders, and equipment:

Raceway systems will generally consist of metal boxes interconnected with Electric Metallic Tubing (EMT.) PVC 40 will be used for underground installations. Rigid galvanized steel (RGS) conduit or intermediate metal conduct (IMC) will be used for exposed exterior work where subject to damage. The minimum conduit size for power wiring will be 3/4".

Conductors will be copper. Insulation will be THWN or XHHW rated for 90°C; however, design will be based on 75°C ratings. Four wire feeders where neutral is considered a current carrying conductor will have an additional 80% derating. A maximum of nine current-carrying conductors, using code-designated derating factors, will be installed in any raceway. All conductors including neutrals and grounding conductors will be color-coded.

Wiring devices will be specification grade, 20 ampere, minimum, color as selected. Device plates will be stainless steel throughout building. Back-to-back installation of devices will not be allowed.

Electrical equipment shall be seismically supported per NECA criteria.

Underground conduits shall be encased in concrete with minimum 3" thickness on all sides with multiple conduits spaced not less than 7 1/2" on center and 1 1/2" apart. Underground conduits shall be buried with a minimum 24" cover below finished grade to top of concrete envelope. Trenches shall be backfilled to 95% compaction with non-detectable type warning tape. Steel sweeps shall be provided for all 90deg bends (horizontal or vertical).

Disconnect switches will be heavy duty type. Exterior switches will be rain-tight. Disconnect switches for packaged HVAC equipment will be fusible type disconnects. Panelboards serving computers shall have integral TVSS.

Load summaries will be provided for all switchboards, and distribution panelboards to support the electrical design. Electrical equipment requirements will be evaluated to determine proper overcurrent protection, short-circuit, and ground fault protection.

Lighting System:

Interior lighting design will meet the following standard requirements:

- Fixtures shall be manufactured by EATON, Phillips, or Acuity.
- EM lighting fixture shall be fed via a central building lighting inverter to provide a minimum 1fc throughout exit pathway.
- Lighting controls shall be provided to conform to latest Title 24 standards.
- Network lighting controls shall be manufactured by nLight.
- LED Fixtures
- Color temperature 3500K for all interior fixtures
- Color Rendering Index (CRI) will have a minimum of 80.
- Lighting (FC) levels will be designed to the following per area:

- 35-40 ftc in common spaces
- 35-50 ftc for offices with task lighting
- 10 ftc in hallways, lobbies, restrooms and support areas
- The following light fixtures types shall be used:
 - Recessed 2x2/2x4 fixtures in offices
 - Recessed downlights in alcove and toilet areas
 - Direct/Indirect Pendant fixtures in common spaces
- Exit Signs – Thermoplastic and Edge Lit. Lettering to be green in color.

Exterior Lighting design will meet the following standard requirements:

- All existing exterior lighting circuits shall be routed via network lighting control panel, and shall be designed to be fully dimmable to meet to Title 24 requirements.
- Color temperature
- 4000K for all exterior fixtures
- Fixtures shall be manufactured by EATON, Phillips, or Acuity
- Exterior wall packs
- Daylighting controls will be designed for all areas required by Title 24 around window glazing. Photocells will be programmed to maintain lighting levels at the designed FC mentioned above.
- Lighting controls shall be designed to meet the following criteria:
 - Dimming switches will have an engraved labeling on the switch plates. The switches will be designed to have multiple function controls with preset scenes for quick selection by faculty and staff.
 - Controls will be a fully networked lighting system with each room connected to the building EMS to interconnect the HVAC system.

Fire alarm system:

A manual fire alarm system shall cover the Aquatics Building conforming to CBC, CFC and NFPA 72 standards. Fire alarm system shall be a manual local fire-protective signaling system and shall connect with central station reporting. Site fire alarm circuits shall be routed through existing FA UG pull box and conduits provided by previous project. Fire alarm system shall provide reporting capability using electrically supervised signal-initiating circuits and alarm circuits.

The fire alarm system shall be comprised of the following:

- Visible and audible (speakers) devices, shall be located along the corridors with spacing that meets NFPA 72 requirements and throughout entire building.
- Manual pull stations to be located in areas normally occupied as required by CFC and as requested by owner.
- Photo-Electric type smoke detectors shall be provided.

Supervision of fire sprinkler system shall be made via flow/tamper switches. Flow/tamper switches shall be located at fire riser, PIV and BFP locations. Signaling of fire water flow shall be made via flow bell. Tamper switches shall be monitored and reported to annunciators and central station.

Air-Handler fan units 2000CFM and over, fire smoke dampers and door holders shall be interfaced with new fire alarm system required by CMC and CFC.

Fire alarm system to be tied to a building remote annunciator panel.

Trouble and Supervisory Conditions shall report to annunciator panel and central station.

All fire alarm circuits shall be segregated from all other signal and power circuits. Fire alarm circuits shall be installed in conduit raceway and painted red to designate fire alarm.

Proper signage of fire alarm control panel location, circuit breakers serving fire alarm equipment and flow bell shall be required per CFC and NFPA 72.

New TVSS to be provided for all new fire alarm circuits.

Environmental Analysis



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Architects

Environmental Site Analysis

EXISTING FACILITY

ENVIRONMENTAL ANALYSIS OVERVIEW:

While Dudek was unable to join the project site assessment walk on August 24, 2023, we received team photos and reviewed publicly accessible databases and local planning documents during the preparation of this report that summarizes relevant information pertaining to existing environmental conditions. Further, this report provides our recommendations regarding specific technical analyses that may be required during preparation of future environmental documentation for compliance with the California Environmental Quality Act (CEQA).

It should be noted that preparation of this report did not include an investigation of potential geotechnical constraints associated with existing on-site soils and related site conditions.



BEGG POOL ACCESS ROAD

Environmental Site Analysis (CTD.)

EXISTING FACILITY

EXISTING CONDITIONS

The project site is situated within an approximate 2-acre site at 1402 North Peck Avenue in the central-eastern area of Manhattan Beach. The referenced acreage encompasses the fenced boundary of the pool site on the north, east, and south, and the footprint of the pool building. It is located to the immediate west of the City's Polliwog Park and Polliwog Dog Park, south of Begg Field (a baseball/softball diamond with grass outfield, field lights, chain-link fencing, and spectator stands) and adjacent surface parking lot, and east of a moderately steep, vegetated downslope, chain-link fencing, and narrow surface parking lot. Manhattan Beach Preschool (1431 15th Street) lies to the west of the referenced narrow parking lot. In addition to grass turf and mature trees, the Manhattan Beach Botanical Garden lies to the immediate south of the site. The nearest residential use (single-family) is situated at the corner of North Peck Avenue and 12th Street and is approximately 135 feet to the southeast of the site.

Land Use and Planning

With the adjacent Manhattan Beach Middle School to the west and covered Peck Reservoir to the north, the project site is designated for public facility use by the City of Manhattan Beach General Plan. Pursuant to the City of Manhattan Beach General Plan Land Use Element (Figure 14), the public facility category refers to uses operated for public benefit, including public schools, government offices, and public facilities, such as libraries, cultural centers, and neighborhood/community centers (City of Manhattan Beach 2003). As with adjacent Polliwog Park, the project site is zoned as open space. Based district regulations for the open space zoned are established in Chapter 10.24 of the Manhattan Beach Municipal Code and park and recreation facilities are permitted uses. Specific development regulations for park and recreation facilities are not identified in Chapter 10.24 of the Municipal Code.

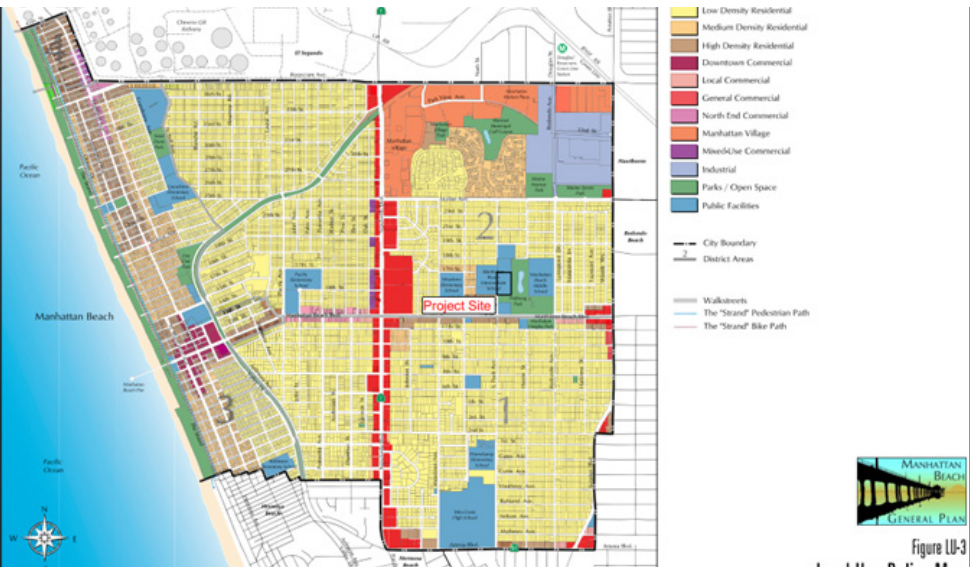
Biological Resources

Due to past development associated with the existing Begg Pool Facility, including adjacent baseball/softball fields, Polliwog Park, the Manhattan Beach Botanical Garden, and more broadly, school and residential development in the surrounding area, the site contains limited potential for wildlife habitat. Due to the developed nature of the city, it is assumed that evaluation of potential impacts to sensitive biological resources (i.e., vegetation, plants, wildlife) due to future development in the City was determined to be unnecessary or screened out of the General Plan Environmental Impact Report.

Despite the limited potential for sensitive natural biological resources, mature trees in the surrounding area (particularly those lining the southern and eastern perimeter of the project site) are potential nesting habitat for avian species (i.e., birds) protected by the Migratory Bird Treaty Act (MBTA). The California Fish and Game Code protects bird nests and the MBTA prohibits the intentional take of any migratory bird or any part, nest, or eggs of any such bird. If clearing, grubbing, or other activities that result in the removal of vegetation occur during the nesting bird season, any impacts to active nests or the young of nesting bird species would be potentially significant.

Potential temporary indirect impacts to nesting birds could also occur because of excessive noise and increased human activity near an active nest; however, necessary compliance with existing (and standard) survey requirements would ensure avoidance of impacts to nesting raptors and/or birds protected by the federal MBTA and California Fish and Game Code, Sections 3503 and 3513. Specifically, if construction-related ground-disturbing activities (e.g., clearing/grubbing, grading, and other intensive activities) must occur during the breeding season (January 15 through August 31), then a one-time biological survey for nesting bird species must be conducted within the limits of grading and a 500-foot buffer (where accessible, and habitat is present) within 72 hours prior to construction. Should any active nests be detected, the area shall be flagged and mapped on the construction plans or a biological resources figure, and the information provided to the construction supervisor and any personnel working near the nest buffer. Monitoring of activities near mapped active nests within specified setbacks of identified buffer area would also be required.

As part of future environmental documentation that may be needed for the project, we recommend preparation of a general habitat assessment to further understand the potential for sensitive biological resources present in the project area.



(FIGURE 14) GENERAL PLAN LAND USE



Environmental Site Analysis (CTD.)

EXISTING FACILITY

EXISTING CONDITIONS (CONT.)

Hazardous Materials

We reviewed the California Department of Toxic Substances Control’s EnviroStor database and the State Water Resources Control Board Geotracker database to understand the potential for listed hazardous sites to impact the project site and underlying resources (i.e., groundwater). No recorded sites were identified within the project site boundary or adjacent parcels, including Polliwog Park and the City of Manhattan Beach Preschool. The nearest listed site, Kavanaugh Development Company (1704 Manhattan Beach Boulevard), was identified on the State Water Resources Control Board Geotracker database as a Leaking Underground Storage site (current case status of the site is closed) (DTSC 2023). See Figure 15, Hazardous Materials Sites Database Review. Based on distance to the Project Site (1704 Manhattan Beach Boulevard is located approximately 0.25 mile from the Project Site), characteristics of local topography, and the closed case status, the site is not anticipated to pose a potential risk to development of the site. We identified several additional closed case sites (primarily Leaking Underground Storage Tank sites) on the EnviroStor and Geotracker databases which are located near the intersection of State Route 1 and Manhattan Beach Boulevard. These sites are not anticipated to pose potential risks to development of the Project.

As part of future environmental documentation that may be needed for the project, we recommend a detailed review of hazardous waste site databases and accompanying memo to evaluate potential risks to project development.

Noise

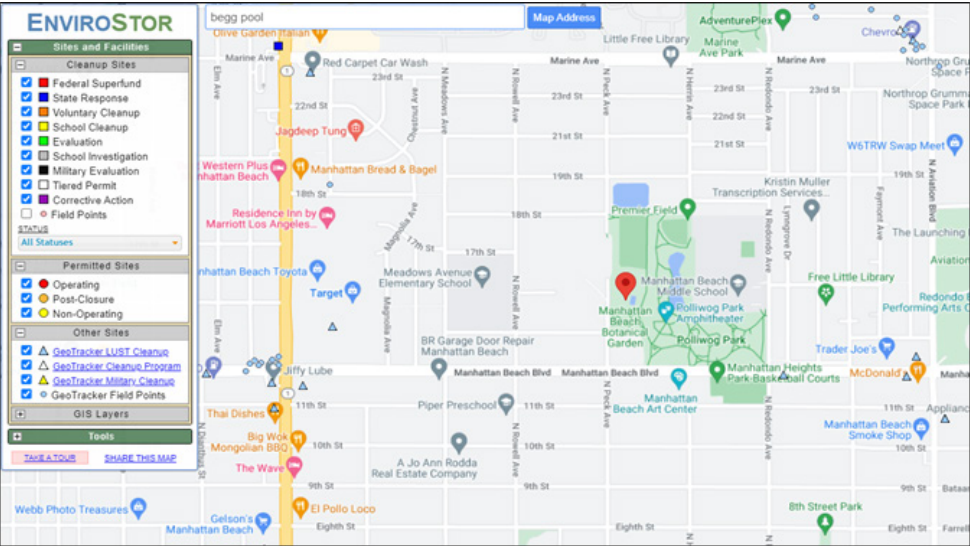
Noise-generating sources are regulated under Chapter 5.48, Noise Regulations, of the City of Manhattan Beach Municipal Code. Due to the proximity of residential uses to the site (the nearest residence to the existing pool facility is located approximately 130 feet to the southwest) and the proximity of the City of Manhattan Beach Preschool (preschool buildings are within 250 feet of the existing pool facility), construction could potentially expose noise sensitive areas to excessive or nuisance noise. While construction activity is exempt from the provisions of Chapter 5.48 (in particular, the exterior and interior noise standards for residential and institutional zones), construction hours and prohibited days are regulated by the Municipal Code. Specifically, construction activity is permitted between 7:30 a.m. and 6:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on weekends and is prohibit on most major federal holidays. Assuming construction adheres to the City’s general requirements for construction activities (Municipal Code Section 9.44.020) and the City’s permitted construction hours (Municipal Code Section 9.44.030), we do not anticipate significant temporary construction impacts to nearby sensitive land uses. Operations present a low potential for new noise impacts to nearby sensitive land uses due to the existing use of the site as a pool facility and required adherence to General Plan goals concerning the minimization of noise-transportation noise sources (Goal 3 of the General Plan Noise Element; City of Manhattan Beach 2003) and the incorporation of noise considerations into land use planning decisions (Goal 2 of the General Plan Noise Element).

SUMMARY:

In conclusion, development of the project site appears to present low risk for significant impacts to select environmental resources and sensitive uses including land use and planning, biological resources, potential hazards related to waste sites/ facilities, and residential and school uses. Potential environmental constraints on the site and surrounding area (specifically those issue areas considered in this report) appear to be limited and are not anticipated to present peculiar or particularly unique issues or impediments to site development.

Categorical Exemption is an option and recommended for the project. A Class 2 (Replacement or Reconstruction) Categorical Exemption seems appropriate, but we need to confirm a capacity increase of more than 50% is not proposed. A Class 32 (Infill Development Project) Categorical Exemption may also be appropriate given the following rationale:

- The project would be consistent with the underlying GP designation and zoning designation (the project would also need to be found consistent with “all applicable General Plan policies”)
- The project site is within the City limits, is less than 5 acres, and is surrounded by urban uses
- Project approval would not result in any significant effects to traffic, noise, air quality, or water quality
- The site can be adequately served by all required utilities and public services.



(FIGURE 15) HAZARDOUS MATERIALS SITES DATABASE



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Task Two Community Engagement



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Community Engagement #1



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Community Outreach

OVERVIEW

Begg Pool has served the community surrounding Polliwog Park for over 60 years. With swim programming ranging from classes, recreational play, senior swimming, and part of Manhattan Beach Unified School District physical education program, Begg Pool is critical to the health and well-being of the community. The Begg Pool facility requires significant pool, mechanical, electrical, plumbing, locker room, and additional upgrades. After a request for proposals and review, the City selected HMC Architects and design consultants to provide recommendations for two options; the first a renovation of the existing building and pool, and the second a new building and pool/pools that could accommodate the needs of the community.

To better understand the programs needed and desired by the Manhattan Beach community, the design team focused on outreach and a survey campaign aimed at understanding the site's critical needs, and community values, concerns, and priorities for current users and future generations.

APPROACH TO OUTREACH

The design team understands that Begg Pool has reached a critical point in its operational life and the City must take action now to keep it operational. However, in order to determine the best solution, the team needed direct input from the community. With significant pool, mechanical, electrical, plumbing, locker room, and additional upgrades required, the study aims to identify the exact modernization needs of the facility and what the community would like to see for the future of Begg Pool. This information was gathered through community outreach and a survey campaign.

Beginning with a series of discovery meetings, which included the City’s Parks & Rec team, pool staff, and Manhattan Beach Unified School District, the team laid the groundwork for a series of topics and questions that focused on big scale items, such as site amenities and size and quantities of pool to more granular questions, including the activities and classes that could be offered. The team surveyed the community to gather opinions about different modernization ideas and how the community prioritizes different needs, including programming, building upgrades, and upgrades to the site.

The team conducted multiple community meetings concurrent with the survey to further this effort. The first meeting was planned for November 13, 2023, with the objective to gain feedback on the different topics and options presented to the community through the survey. The goal was to collect community input that would lay out the groundwork for the program assessment that would drive the design of both options.

OUTREACH MEETINGS

Information from this study will be presented at community outreach meetings which will drive the conversation surrounding improvements and modernization of the Begg Pool site. These meetings are intended to be as informative as possible, while creating an interactive way to engage the community.

MEETING FORMAT

The first community meeting occurred on Monday November 13, 2023, at the Manhattan Heights Community Center, across the street from Begg Pool site. Postcards were sent to residents of Manhattan Beach within 1,000 feet of Polliwog Park and distributed at public events and venues. Information was also posted on the project website. Guests were invited to attend and participate in a set of informational sessions, interact with a model of the Begg Pool site, and provide feedback. There were seven different tables at this event, each hosted by a discussion leader which included architects, parks & recreation staff, and aquatic experts.

Each guest was given a set of stickers, (red, yellow, and green) to gauge their interest in the different topics at each table and was able to a discuss with a specialist team member about the presented concepts. Guests had an opportunity to dive into the details of the different topics and were given the opportunity to share comments, suggestions or concerns on a giant table-top writing sheet.



Topics & Discussions

Table Topics

It was important to discuss the themes and topics that consistently came up in survey responses, and in meetings with the city, MBUSD, community organizations, and community members.

It was important that we provided information and answered questions about the areas that have the best chance to be recommended in designs.

Five (Tables 1-5) tables were dedicated to the following areas of interest:

- Pool Types & Configuration
- New Facility Support Amenities
- Pool Building Amenities
- Education, Wellness & Water Safety
- Community Team Sports & Active Uses

Each table was hosted by an HMC team member and, in some cases, accompanied by Parks & Recreation staff.

Build Your Begg Pool

A sixth table provided guests with an opportunity to model the site according to their interests using an aerial image of the site and scaled model pieces.

Informational Table

A seventh table was dedicated to providing information and the option to discuss any issues, concerns, or topics of interest with both the Architects and City staff.

Key Findings

Musts:

- More Water - Larger Pool/Pools
- Upgraded Bathrooms & Locker Rooms

Desires:

- Increased Pool Availability
- Increased Recreation
- Outdoor Showers & Other Deck Improvements
- More Seating & Shade
- Water Safety Training

Concerns:

- Pool Access During Construction
- Neighborhood Impacts
- Parking
- Funding



Pool Types & Configurations

This table presented information about different pool sizes, quantities, and possible configurations. An additional discussion topic was pool use and how that relates to size.

Requests

- Two pools- Larger Pool
- Increased Daytime Availability
- Temperature Control

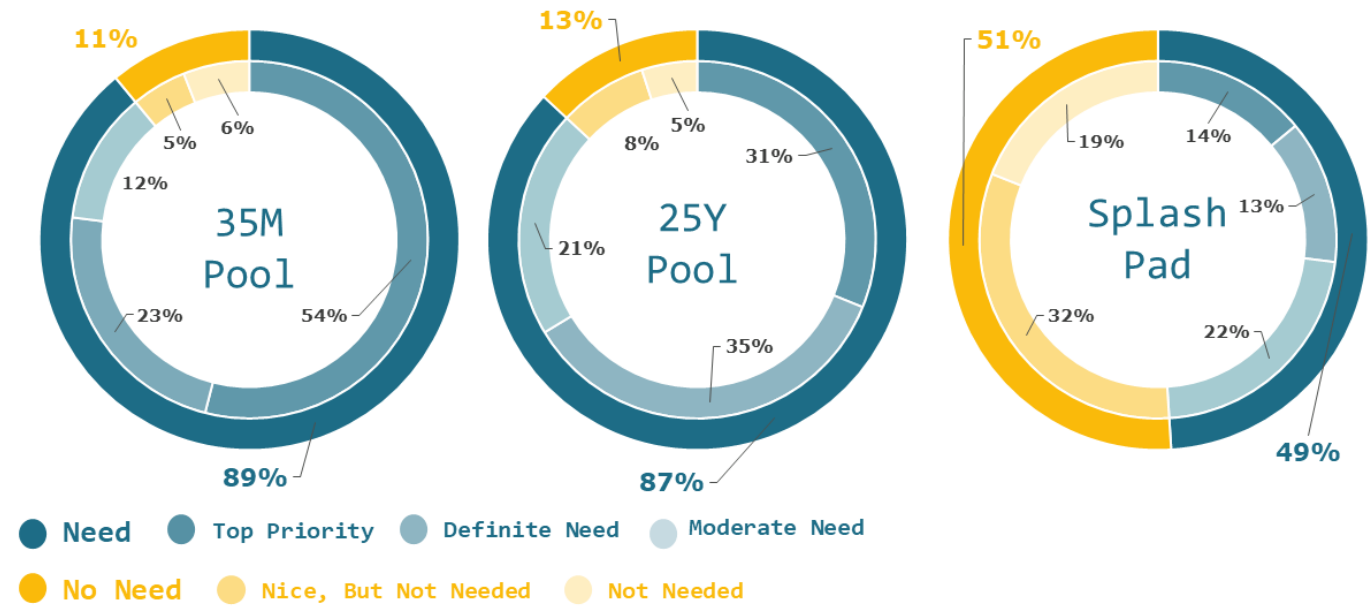
Interest Board Statistics

The use of colored stickers offered visitors the opportunity to mark their interest in presented items.

Community Engagement Findings



Survey Findings



Pool Building Amenities

Community Engagement Findings

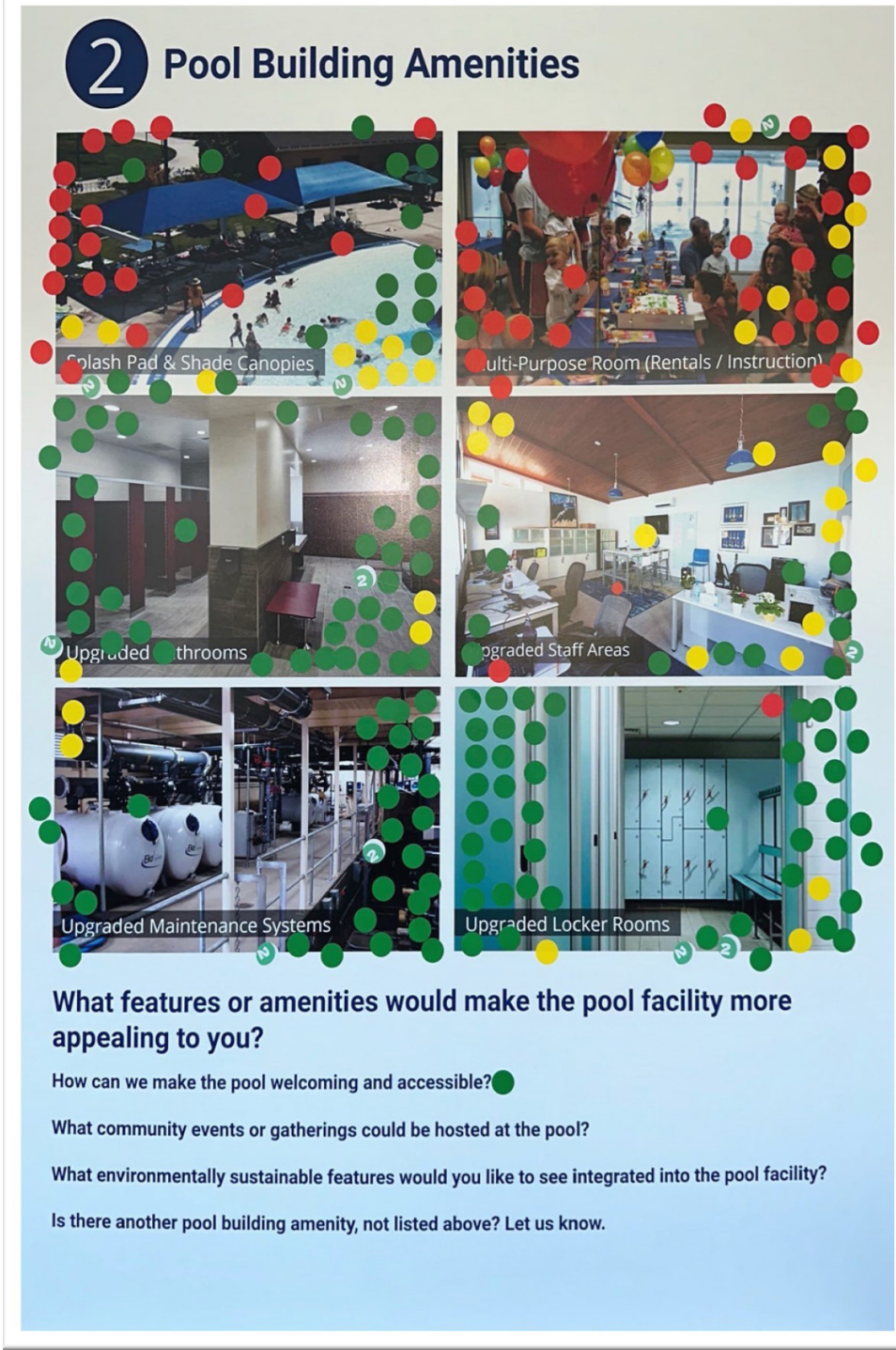
At this table, visitors could discuss upgrades to the Begg Pool's building amenities and pool accessibility. Community events, environmental accessibility, and/or sustainable improvements were proposed as an option.

Requests

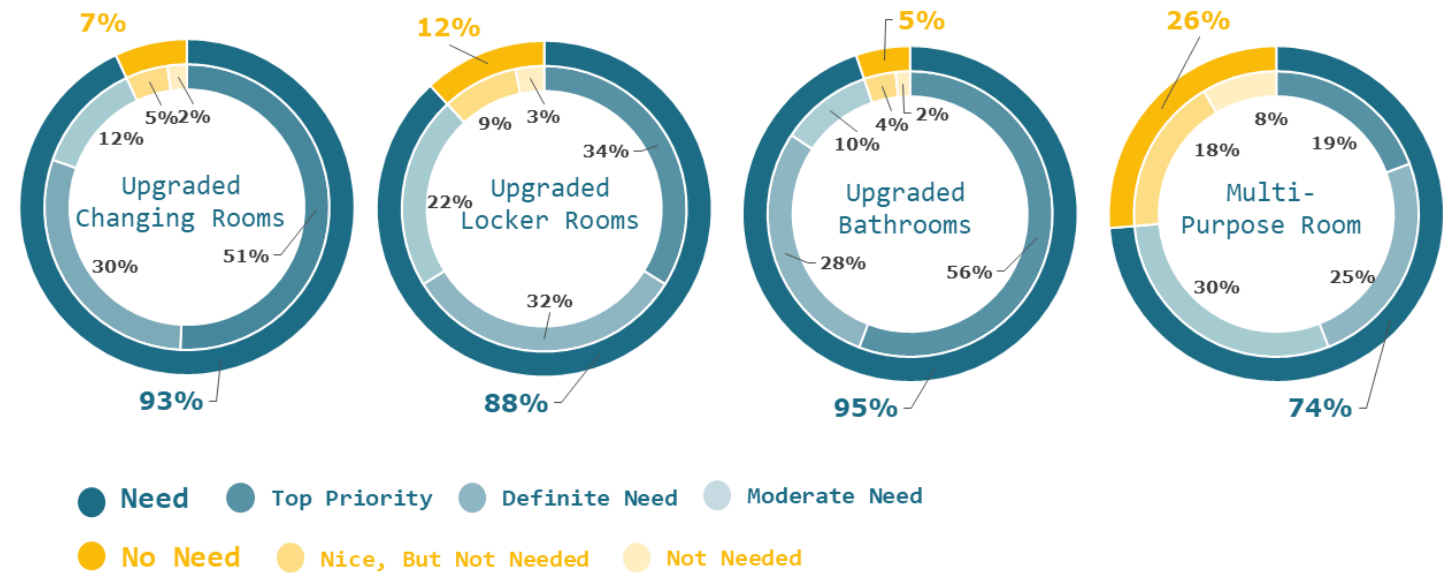
- Locker Room Upgrades
- More Bathroom Stalls
- Family-Style Changing Rooms
- Shade Canopies

Interest Board Statistics

The use of colored stickers offered visitors the opportunity to mark their interest in presented items.



Survey Findings



Education, Wellness,
& Water Safety

Community Engagement Findings

This table were presented information about community wellbeing programs and activities, including but not limited to swim lessons, CPR classes, water safety classes, and water therapy classes.

Requests

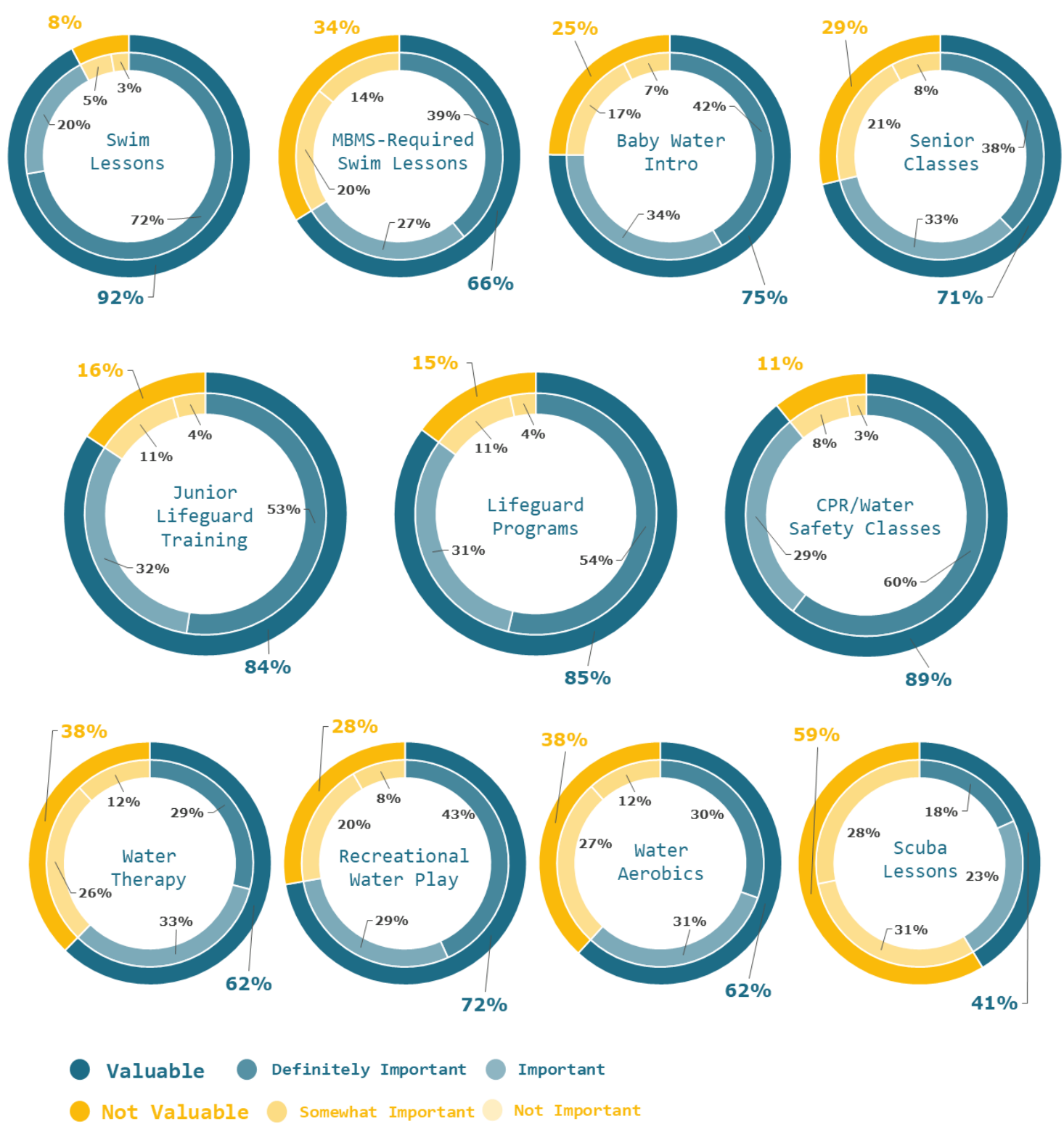
- Locker Room Upgrades
- More Bathroom Stalls
- Family-Style Changing Rooms
- Shade Canopies

Interest Board Statistics

The use of colored stickers offered visitors the opportunity to mark their interest in presented items.



Survey Findings



New Facility
Support Amenities

Community Engagement Findings

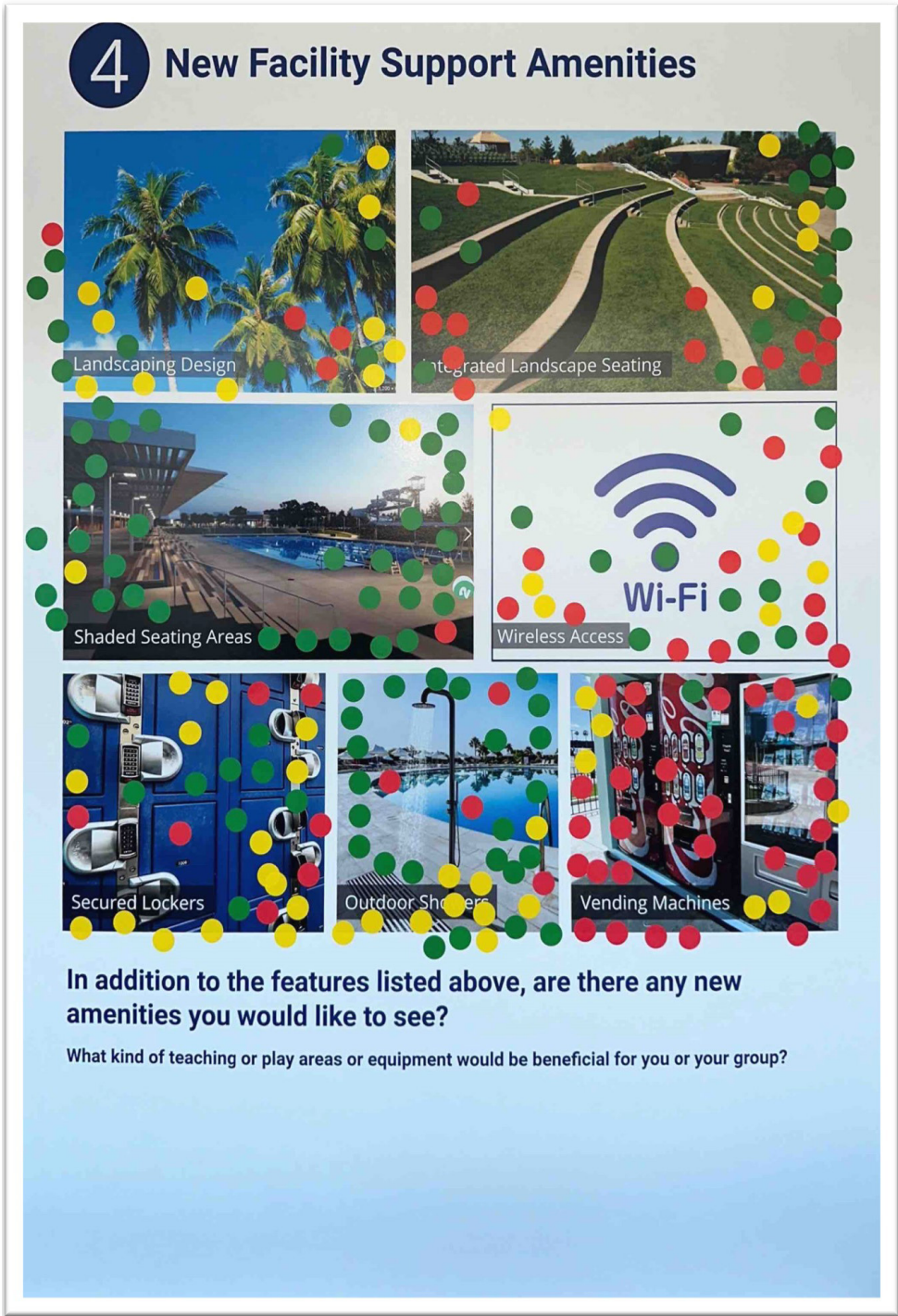
This table presented information about support amenities, like shaded seating areas, WiFi access, and vending machines. Suggestions were also solicited from guests to see if any teaching or play equipment would be useful.

Requests

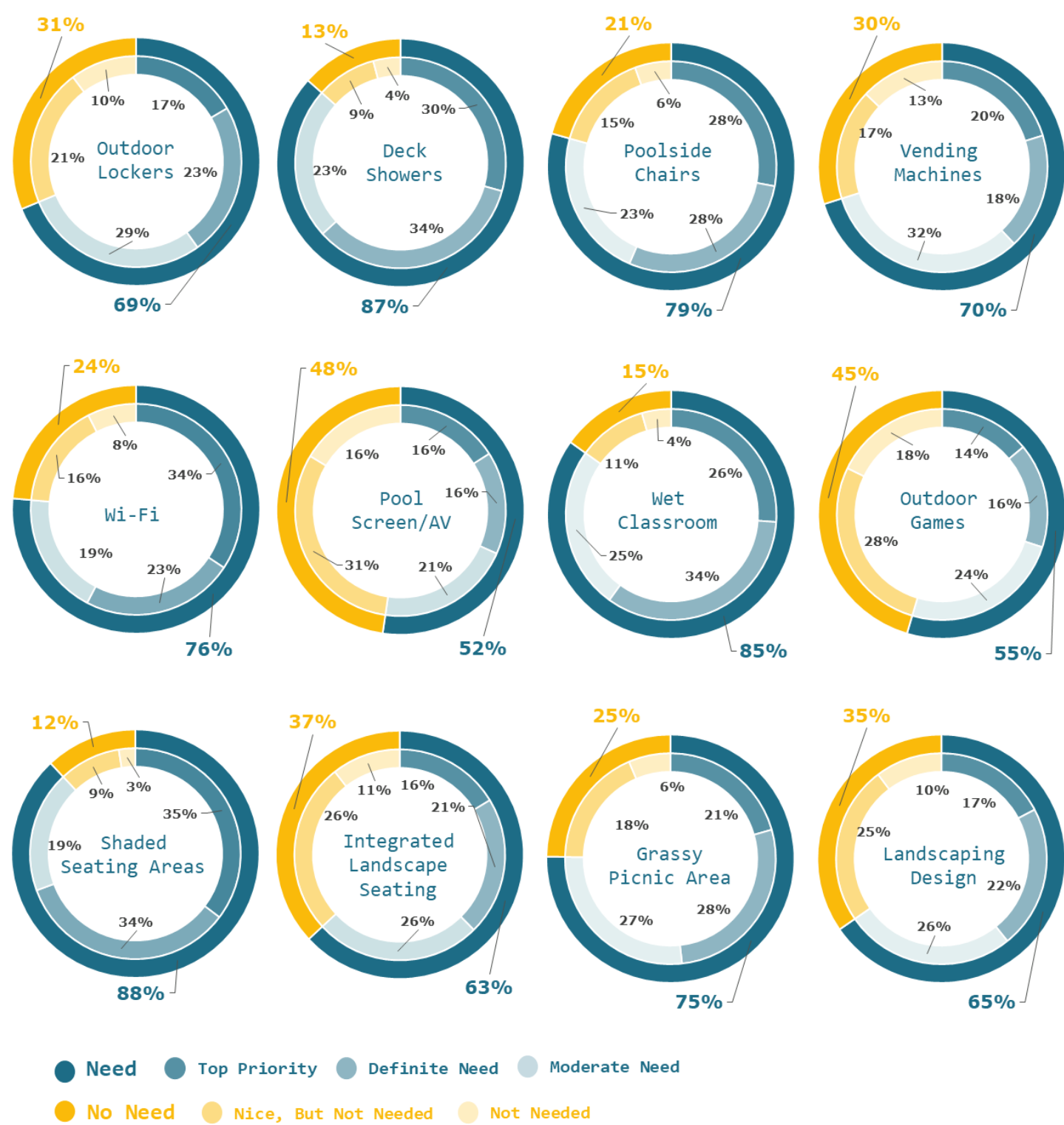
- Bleachers
- Seniors' Water Access
- Shaded Areas and Pool Shade
- Natural Shade Trees
- Outdoor Cubbies
- Competitive-Level Record Keeping For Swim Team
- Private Triage Room and Staff Area For Lifeguards
- Gender-Neutral Changing Areas
- Heated Pool Deck
- Removable Diving Board
- Water Aerobics Underwater Grip

Interest Board Statistics

The use of colored stickers offered visitors the opportunity to mark their interest in presented items.



Survey Findings



Community Team Sports and Active Uses

Community Engagement Findings

This table presented information about sports team and active uses at Begg Pool. Conversations centered around the teams who use Begg Pool and the modernizations necessary for these sports teams.

Requests

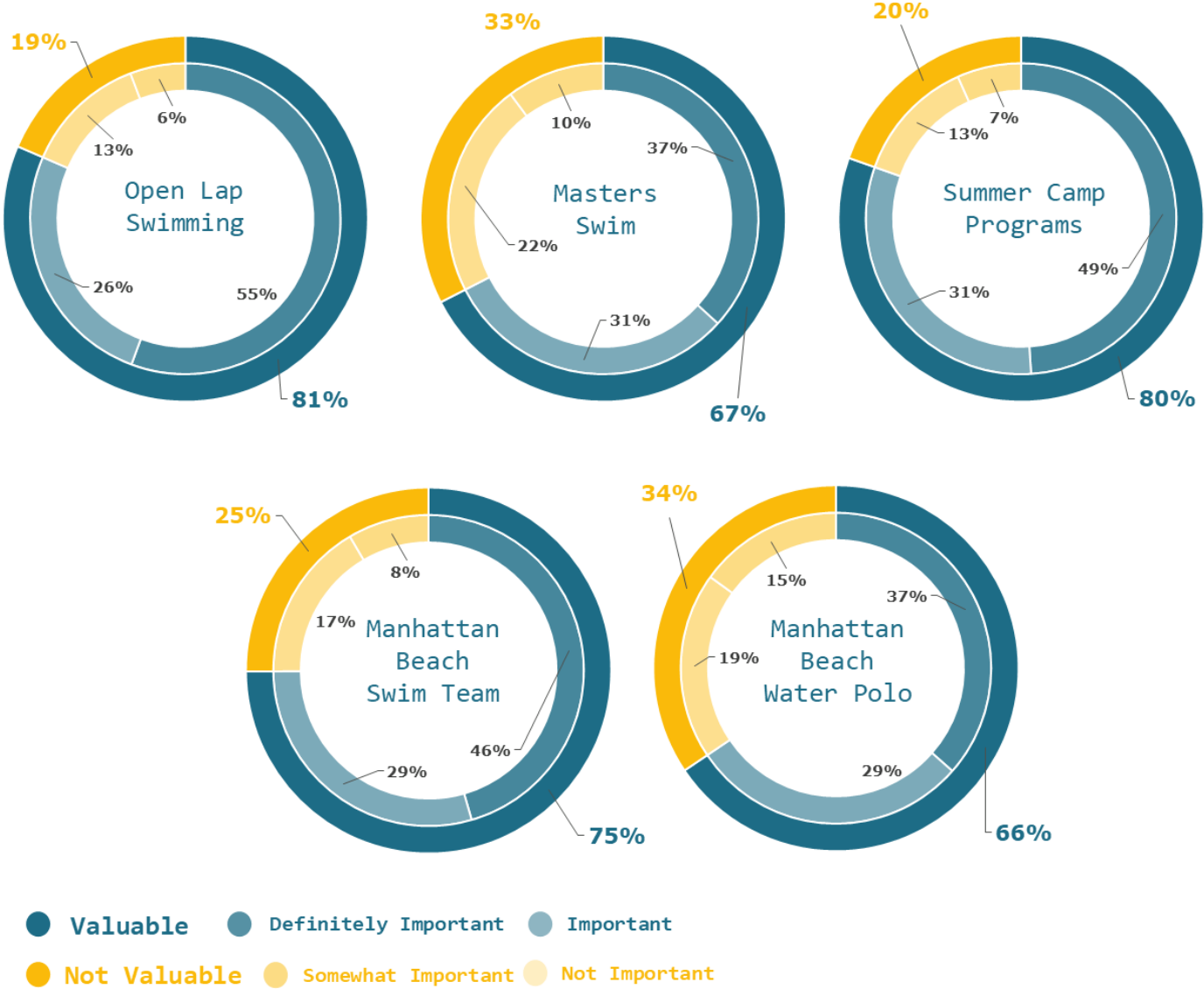
- Increased Pool Availability
- Family Open Swim
- Seniors' Swim Team
- Increased Parking
- Larger Pool
- More Club Swimming
- More Water Polo

Interest Board Statistics

The use of colored stickers offered visitors the opportunity to mark their interest in presented items.



Survey Findings



Build Your Begg

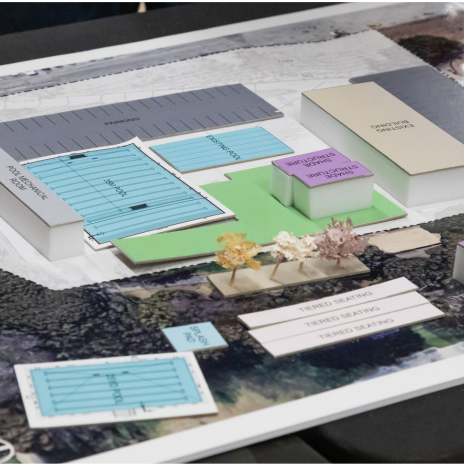
Guests at the Build Your Begg table were able to configure their own ideal version of the Begg Pool site using an aerial image and scaled model pieces.

Configurations

Design configurations were posted for other guests to rate and collaborate on. The designs were recorded and kept for use in future design concepts for the Begg Pool.

Key Take Aways From Written Comments & Discussion

- Addressed the following concerns:
 - Pools
 - Parking/Vehicular Access
 - Amenities
 - Support Building
- Solutions Recommended
 - Single Pool Builds: 16%
 - Two Pool Builds: 76%
 - Three Pool Builds: 8%
 - More Efficient Site arrangement:100%
 - Parking Structure: 24%
 - Additional Parking On Peck Ave: 56%
 - Splash Pads: 44%
 - Hillside Terrace Seating 68%
 - Terraced Seating: 100%
 - Lobby Space: 44%
 - Lifeguard Offices: 56%
 - Community Room: 32%



Community Engagement #2



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Community Update

Overview:

At the Second Community Engagement meeting, the design team presented conceptual design ideas to the community based on the information gathered during the first meeting and from the survey. The team prioritized cost-conscious solutions that best met the needs of community. This presentation would help team understand positive feedback and any missing priorities and allow for more accurate conceptual designs and estimates. A description of the Needs Assessment, which includes program space requests, can be found in Task 3 of this report. As part of Task 4, the design team focused on developing the conceptual designs for Option 1 & Option 2 that included the requested program.

Th team presented the conceptual design ideas to the Manhattan Beach Parks and Recreation team as well as the Manhattan Beach Unified School District to get their initial input prior to presenting to the community. After a couple of iterations, the design ideas were ready to be presented. Postcards were mailed out and distributed to the public. The information was also listed on the City's project website.

Approximately 100 people, 50 in person and the other 50 via Zoom, attended the Second Community Engagement Meeting on February 27th at the Town Council Chambers from 6-8pm where the design team presented a slide deck and held Q&A after. The first portion of the meeting focused on presenting the findings of the first meeting and survey. Then, the team presented the conceptual design options followed by community input.

Community Questions & Input:

Parking - Several audience members brought up questions regarding parking, since it was being reduced slightly in both options. Parking has been a problem in the past when there are multiple events at the park. Some ideas, including a parking structure and expanding into Begg field, were proposed. The team noted that a parking structure will be costly and take up a good portion of site.

The California Building Code (CBC), Division of State Architect (DSA), and the City of Manhattan Beach currently don't have a minimum parking requirement. However, the CBC does note that a minimum number of EV charging stations, EV ready, and accessible parking have to be accounted for based on the total parking available.

The team tried to maximize parking in both options and looked at different layout options as well as angled parking. The parking layouts shown were the more efficient layouts.

Community members suggested parking transportation and/or parking on Peck Road, which was discussed afterwards between the design team, the City, and the District. The team studied additional parking options on Peck Rd. and provided it as an add-on in estimate. See exhibits referenced at end of report.

Solar Photovoltaic (PV) - The community was interested in adding solar panels to help power facility and pools. It was noted by ADG that it is not efficient to use photovoltaic (PV) panels to power the pool and equipment since it will never reach net zero. Pools and the associated equipment usually require a lot of power that cannot be covered by PV's. However, PV's are a great option to power the building. The design team looked at the options to provide PV and adjusted conceptual designs and estimate to capture this change.

Shade - Community members were concerned about the amount of shade shown in renderings and requested solid canopies for year-round shade. HMC accommodated this request, which can be seen as part of revised renderings shown in Task 4.

Splash Pad - A couple of community members brought up a splash pad as a fun opportunity to expose children to water. This item did not trend that high during the survey and community engagement #1 findings, so was not originally included in design. After the presentation, HMC and ADG looked at options to provide a splash pad; however, due to lack of space and the need to add more plumbing fixtures to the building, it was decided with the City to explore other options that may serve this purpose.

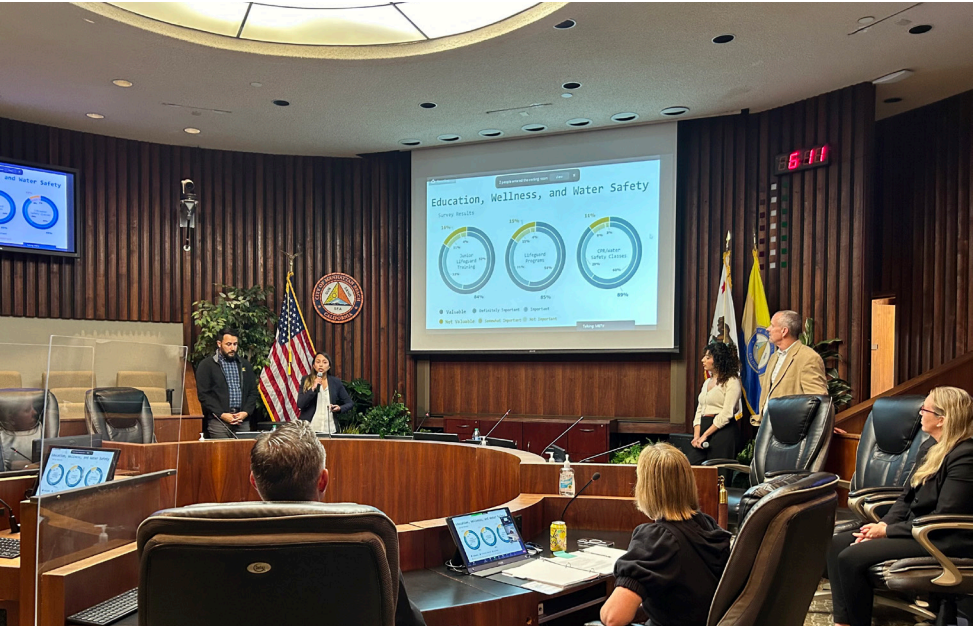
Egress - Some community members brought up concerns that people would have to cross road to get to building entrance with the proposed path of travel (POT). The team noted these were the only locations for POT because of current site layout and the length of ramps and stairs to meed ADA requirements. However, there is a proposed drop-off location in front of the building that avoids this issue. Attendees also asked about the number of exits to the building. The community liked the front entrance lobby space, but wondered if there would be other entrances and exits. HMC noted that there would be other emergency

exits, but to better monitor and secure the facility, the main public entrance would remain at the Lobby area.

50M Pool - One community member asked if the team had looked at adding a 50-meter pool instead of a 35-meter pool. Based on the needs and request for programs and classes, HMC noted there was no need for a 50-meter pool; the programs and classes requested could all be accommodated in a 35-meter pool. Also, the existing site could only fit a 35-meter pool and 25-yd pool. Anything bigger would require a slightly larger building and equipment room to accommodate the up-sizing of equipment and additional necessary plumbing fixture, which would take up more space and further reduce parking. The 50-meter pool is also significantly more expensive to operate and maintain.

Other - The community also asked about availability during construction, swim suit spinners, site lighting, and pool dimension clarifications. These were answered by HMC, ADG, and the City.

After the community engagement meeting, the team finalized designs and provided a cost estimate for both options for the City and District's review.



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Task Three Needs Assessment



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Project Program Highlights

Overview

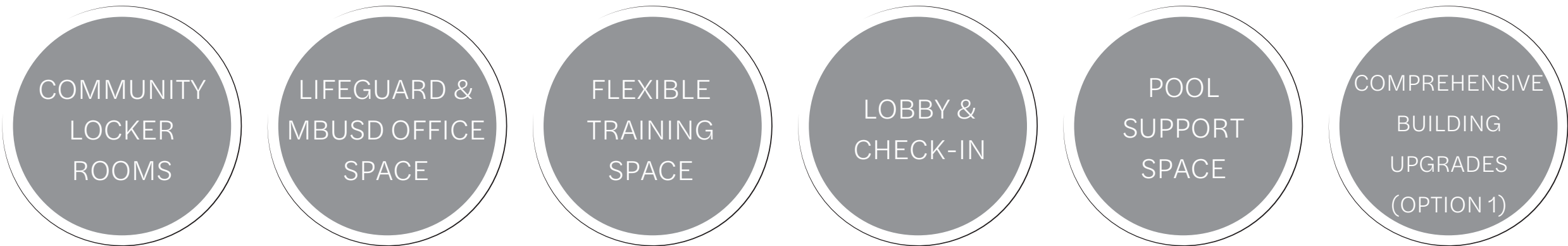
During Task 3, a comprehensive needs assessment was conducted to clearly define the City and District needs for the facility, with a focus on refining space usage for enhanced efficiency. Building upon the insights gathered from Task 1 (site analysis) and Task 2 (community engagement), we engaged in dialogue with City staff and the Parks and Recreation Commission to ensure alignment with community needs and aspirations. Through collaborative discussions and analysis, we have identified several key requirements for the facility.

The presentation of all materials and findings to District staff and the City served as an opportunity to solicit feedback, validate findings, and refine the project scope. Their input and insights have informed the subsequent design iterations and decision-making processes, ensuring that the facility aligns closely with the overall vision and priorities.

SITE



BUILDING



Program

NEW BEGG POOL FACILITY - OPT 02 (2 NEW POOLS)					
	Qty.	Space ASF	Total	Notes	Total Dept. ASF
INDOOR PROGRAM					
Public Spaces/Common					500
Lobby	1	250	250	Originally 500	
Check-in	1	250	250	(May be combined with above)	
Administration					2,290
City Lifeguard Staff Offices	2	125	250		
Lifeguard Observation	1	380	380	Includes Storage	
Break Room	1	280	280		
Lifeguard Triage Room	1	100	100		
Lifeguard Locker & Dressing Room	2	130	260		
Lifeguard Training Room	1	800	800		
District Staff Offices	2	110	220		
Women's Staff Locker and Dressing Room	0	125	-	Use GN facilities	
Women's Staff Restroom	0	100	-	Use GN facilities	
Men's Staff Locker & Dressing Room	0	125	-	Use GN facilities	
Men's Staff Restroom	0	125	-	Use GN facilities	
Locker Rooms/Restrooms					3,015
Women's Locker and Dressing Room	1	650	650		
Women's Restroom	1	350	350	10 toilets	
Women's Shower room	1	350	350	Approx 14 showers	
Men's Locker and Dressing Room	1	650	650		
Men's Restroom	1	300	300	4 toilets/6 urinals	
Men's Shower Room	1	325	325	Approx 14 showers	
Family Dressing Room	2	130	260		
Gender Neutral Dressing Room	1	130	130		
Pool Equipment					2,345
Pool Storage (Indoor/Outdoor)	1	500	500	200 (indoor) + 300 (secured outdoor)	
Pool Mechanical Room	1	1,545	1,545	75' x 20'	
Pool Chemical Storage	3	100	300		
Building Services					1,060
Electrical Room	1	100	100	12'x8' room dimensions	
Data Room	1	135	135	10'x8' room dimensions	
Mechanical Room	1	375	375	25'x15' room dimensions	
Custodial Closet	1	100	100		
General Storage	3	70/140/140	350		
Drinking fountain				6 Drinking Fountains	
Total Indoor Program			9,210		9,210

RENO BEGG POOL FACILITY - OPT 01					
Qty.	Space ASF	Total	Notes	Total Dept. ASF	
				365	
1	200	200			
1	165	165			
		0			
				1155	
0	125	0			
1	235	235			
1	200	200			
0	60	0	New Support Building		
1	450	450	District & City to share Lockers & Dressing room		
0	800	0	New Support Building		
2	135	270			
0	100	0	Use GN facilities		
0	100	0	Use GN facilities		
0	100	0	Use GN facilities		
0	100	0	Use GN facilities		
				2815	
1	515	515			
1	330	330	4 REQUIRED / 5 PROVIDED)		
1	440	440	13 SHOWERS		
1	520	520			
1	330	330	2 TOILETS / 2 URINALS REQUIRED		
1	400	400	13 SHOWERS		
2	140	280			
0		0			
				1330	
1	505	505	New Support Building		
1	625	625	25 X 20; New Support Building		
2	100	200	New Support Building		
				905	
1	190	190			
1	95	95			
1	375	375			
1	95	95			
1	150	150			
		0			
				6570	

EXISTING BEGG FACILITY			
Qty.	Space ASF	Notes	Total
			0
0	0		0
0	0		0
			765
0	0		0
1	105		105
1	200	Includes Locker/ Dressing/ Training	200
2	170		340
0	0		0
1	60	Restroom includes locker and dressing area	60
0	0		0
1	60		60
1	1170		1170
1	116	Includes sink area	116
1	715		715
1	1170		1170
1	145	Includes sink area	145
1	715		715
0	0		0
0	0		0
			660
2	125	Indoor @ Locker room	250
1	330		330
1	80		80
			272
0	0		0
0	0		0
1	250		250
1	22		22
			5728

OUTDOOR PROGRAM					
Pools/Splash Pad					26,200
35 Meter Pool	1	9,350	9,350	35M x 25Y	
35M Pool Deck	1	7,350	7,350	Assuming 10' Clearance; Pool Deck can overlap with other pool	
75' x 45' Pool (Similar to Existing)	1	4,000	4,000	75' x 45' (25 yards x 6-lanes with 18" buffers on the two outside lanes) + a 150sf of stairs.	
75' Pool Deck	1	5,500	5,500	Assuming 10' Clearance; Pool Deck can overlap with other pool	
Existing Pool	0	3,160	-		
Existing Pool Deck					
Splash Pad	0	650	-		
Amenities					8,320
Shade Structure	1	1050/1050/6	3,400		
Seating	1	420/400/300	3,820		
Public Restroom	0	400	-		
Lawn Area	1	1,100	1,100	Existing Gated area (3,544 SF) + Public area(6,510 SF)	
Photovoltaic Panels (PV)	1	4,100	4,100	PV's @ Parking Lot	
Parking					22,500
Asphalt Paving Parking	1	22,500	22,500	1 space per 2.5/3 occupants. 27,000 shows existing paving, would need to determine needed size based on OCC load	
Total Outdoor Program			61,120		57,020

0	8,800	0	
0	3,780	0	
1	3,150	3150	
1	6,900	6900	
0	3,160	0	
0	5000	0	
		0	
		0	
			8100
1	3900/900	4800	
1	600/1350	1950	
1	1,350	1,350	Existing Gated area (3,544 SF) + Public area(6,510 SF)
0			
			25,500
1	25,500	25,500	1 space per 2.5/3 occupants. 27,000 shows existing paving, would need to determine needed size based on OCC load
		43,650	43,650

			3160
0	3,520		0
			0
1	3,160		3160
0	3,765		0
			0

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HMC ARCHITECTS

Task Four Conceptual Design



HMC
Architects

Architectural Basis of Design (BOD)



HMC
Architects

Architectural BOD

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

Design Process

The conceptual design for the Begg aquatics facility was developed through a highly collaborative process between the architect and consultant team, the project advisory committee, Begg pool staff, MBUSD, and Manhattan Beach residents.

- Community Engagement & Input
- Project Committee Collaboration
- Site Analysis
- Facility Assessment

An architectural design language is inspired by the purpose and place, reflected in the formal expression of the architecture, and visualized in the material and color.

The Water’s Surface

The design sought inspiration from the dynamic flow of a water’s surface as it is acted upon by the movement of swimmers in competition and in play. Like a wake created by the force of a swimmer moving through water, our building was inspired to reflect a community that is moving forward and is having fun while doing it!

The Swimmers Movements (Purpose)

Our design captures the essence of fluid motion. Just as swimmers adapt their strokes to effortlessly glide through water, our architectural elements adapt and flow seamlessly within the built environment. By drawing inspiration from the fluid movements of swimmers, we aim to imbue our architectural designs with purposeful meaning and functionality.

The Manhattan Beach Dunes (Place)

The gentle flowing movement of the site and architectural forms are in part inspired by the natural environment that defines the Manhattan Beach community. These natural landmarks not only provide a sense of place but also serve as a reminder of the rich history and ecological significance of the coastal landscape and support the idea of a community built on the dunes. Peaks and valleys of the roof lines and canopies are inspired by the undulation of the sand dunes that remain resilient in the face of changing environmental conditions and human needs and are a defining feature of Manhattan Beach.

Materials

Durability & Maintenance, Tones & Textures, Daylight, Water & Motion.

Great architecture is born from a simple idea that is articulated with the utmost clarity. Listening to input from stakeholders, the project team developed a simple approach to massing by organizing two highly efficient program bars with an entry in the middle. This two-spoke pinwheel promotes entry, high visibility, sight-lines, safety, daylighting and engages with the neighborhood context and surrounding park. This simple massing approach is articulated through architectural detailing in the following ways:

- Window, wall and roof are each articulated clearly to reinforce clarity.
- The building entry sign is a bold way to clearly identify entry and place.
- The circular motif of the shade screen is symbolic of the aquatic center’s purpose.
- Pool deck terracing clearly defines zones for sport and recreation.
- The earthy tones and textures of dunes inspire the selection of materials, evoking a tactile connection to the coastal terrain.

Sense of Place

The architectural language of the building uses familiar angular forms and materials in exciting ways to create a setting that feels comfortable and familiar yet distinct and exciting. The plan diagram and roof angles are born from place, but they are integrated with the park and pool areas to create more than just a refecation of present context and encourage growth and community building through play and competition. The needs of “place” for this community today will inevitably change in the future. The design is simple and clear to provide a wonderful place for the community to gather. It also is open enough in its articulation to leave room for the next generation’s need for place.

Supervision and Safety

The project design is focused on providing a high level of supervision and safety is several ways:

- Clear and controllable single point of entry.
- Centralized location of the lifeguard office that provides visibility of the entire pool deck as well as entries to locker rooms, outdoor lockers, and shower areas.
- Separation of vehicular parking lot and pedestrian spaces
- Widening of entry driveway
- Emphasis on daylight and well-lit interior spaces
- Coaches offices with observation of student locker rooms.
- ADA compliance, Improved emergency vehicle access.

Sustainable Practices

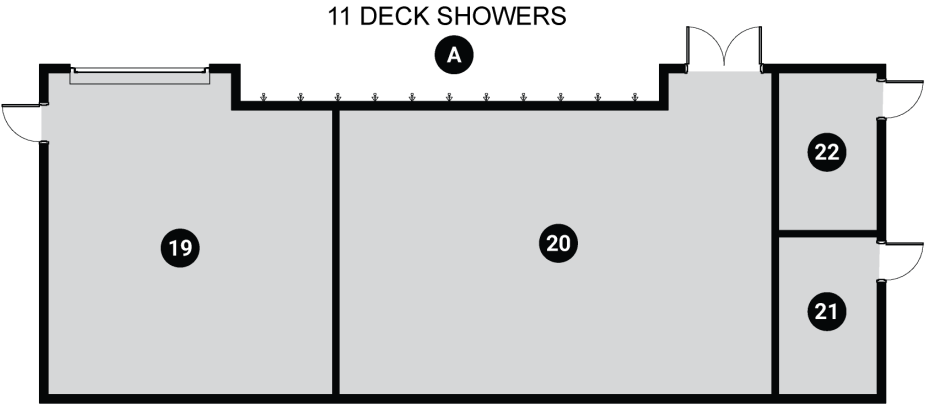
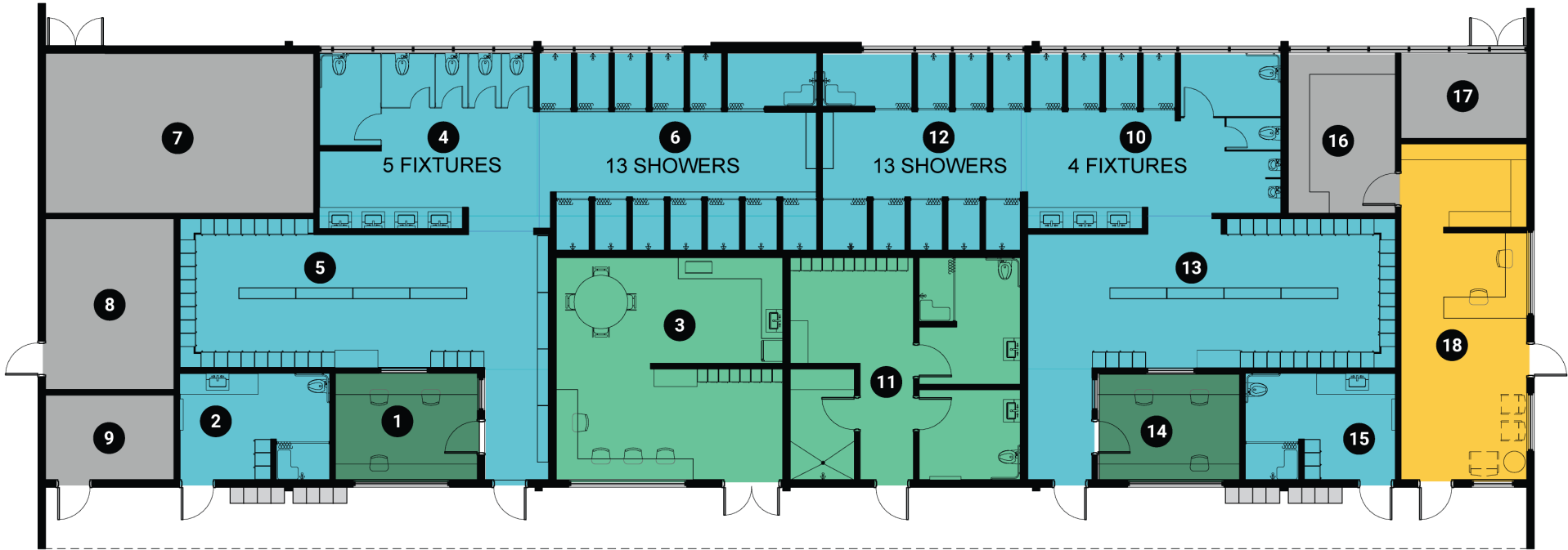
Sustainability and green building design are integral to the way we approach design. Concepts such as biophilia and connections to nature, healthy materials, and spaces to promote community engagement are woven into our design strategies. Additionally, the team evaluated and identified opportunities to reduce overall water use and demand across the site. The building itself will also use several sustainable strategies. Low-flow and flush plumbing fixtures will reduce the amount of water used. Water and energy meters will monitor individual uses and detect irregularities. Our designs will incorporate natural lighting and daylighting strategies to give quality views to the outdoors and reduce electrical lighting needs. Our planned material choices will reduce the impact on natural resources and create a healthy interior space. During design, we will conduct embodied carbon studies to help reduce the total carbon footprint of the facility. During the construction process, we intend to divert 75% or more construction waste from the landfill, as part of our Construction Waste Management Plan. After construction is complete, we will perform indoor air quality testing to ensure a healthy building at turnover. Once constructed, we will perform enhanced commissioning to ensure the building performs as designed at turnover and, again, ten months after occupancy.

- Passive architectural sustainability solutions
 - East west orientation of the building to reduce solar heat gain
 - Protection of southern glazing
 - Incorporation of Daylighting
 - Use of sunshades
 - Utilization of environmental design software to maximize daylighting while minimizing glare.



Floor Plan

OPTION 1 - RENOVATION STUDY



MAIN BUILDING

	(SF)		(SF)
1 STAFF OFFICE #1	135	10 MEN'S RESTROOM	330
2 FAMILY DRESSING #1	140	11 STAFF DRESSING	450
3 BREAKROOM	435	12 MEN'S SHOWERS	400
4 WOMEN'S RESTROOM	330	13 MEN'S LOCKERS	520
5 WOMEN'S LOCKERS	515	14 STAFF OFFICE #2	135
6 SHOWERS	440	15 FAMILY DRESSING #2	140
7 MECHANICAL	375	16 STORAGE	150
8 ELECTRICAL	190	17 DATA	95
9 CUSTODIAL	95	18 LOBBY / CHECK-IN	365

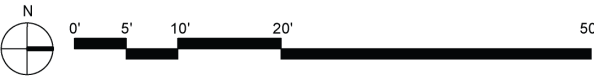
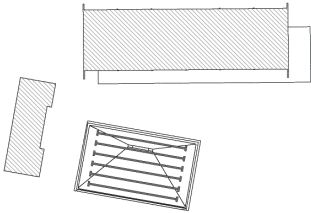
MECHANICAL

	(SF)		(SF)
19 POOL STORAGE	505	22 POOL CHEMICAL #2	115
20 POOL MECHANICAL	625	A DECK SHOWERS	
21 POOL CHEMICAL #1	90		

LEGEND

- RESTROOM/LOCKERS
- FACULTY OFFICES
- ADMINISTRATION
- BUILDING SERVICES
- POOL EQUIPMENT
- COMMON SPACE

KEY PLAN





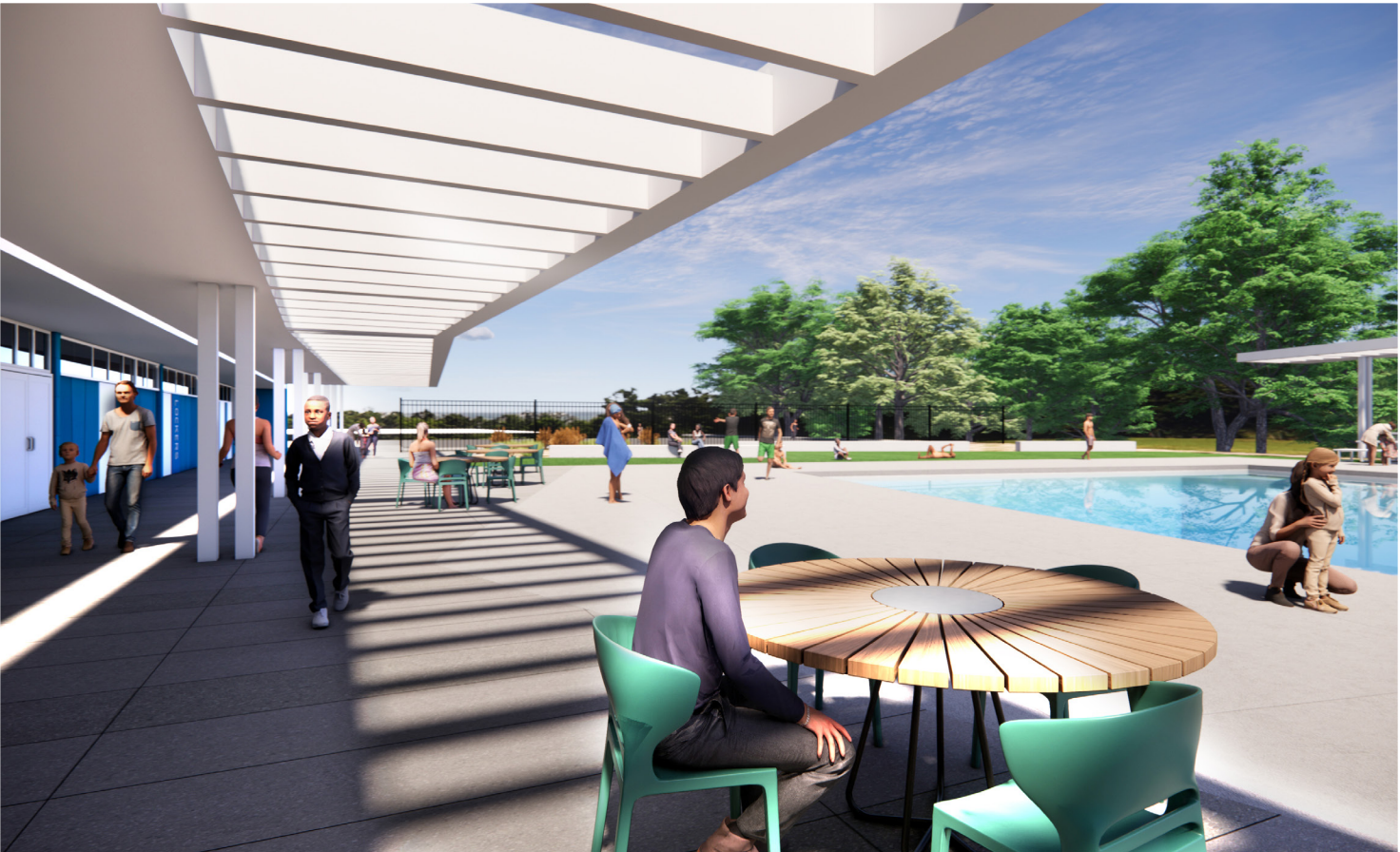
Aerial Rendering View

OPTION 1 - RENOVATION STUDY





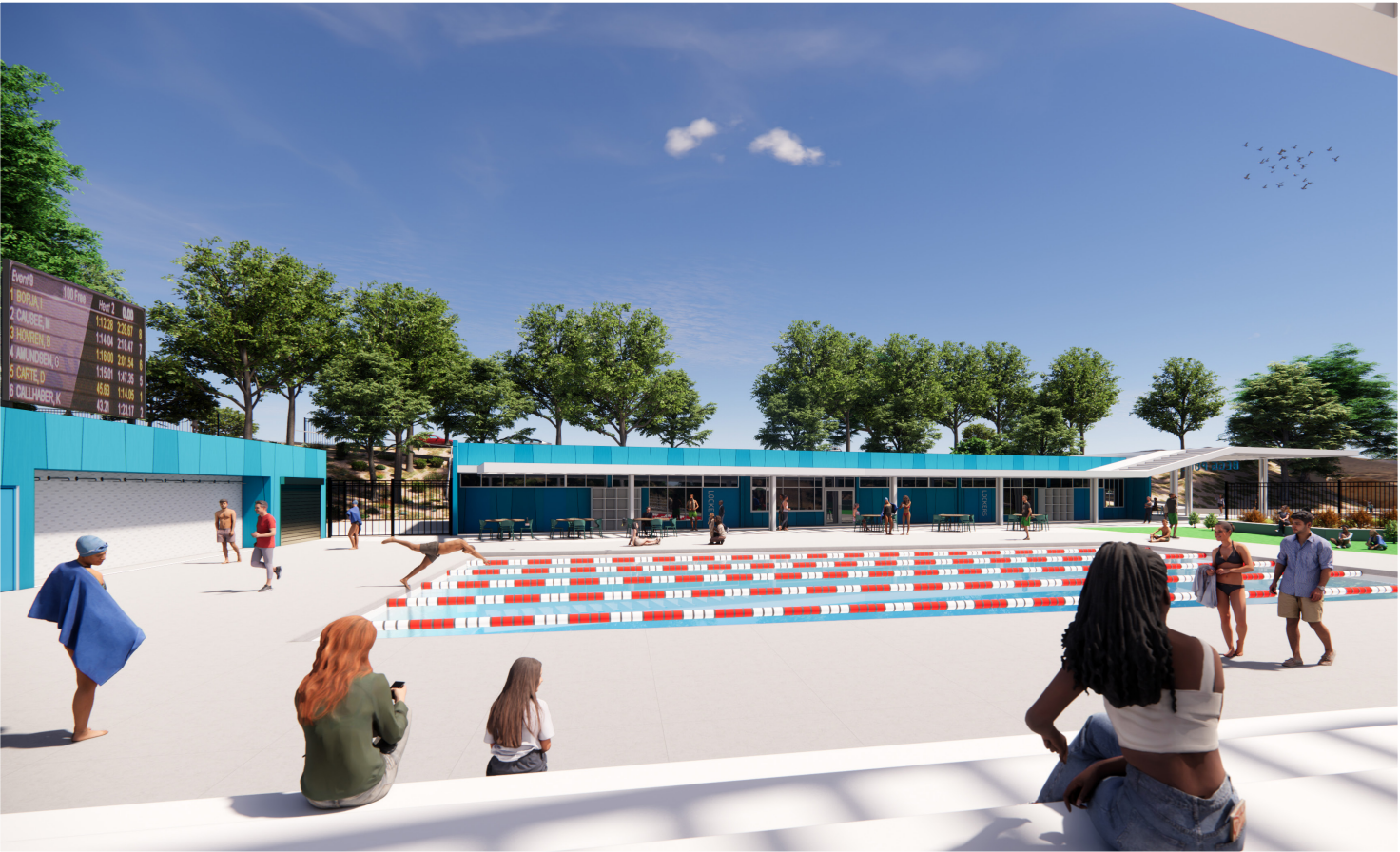
MAIN ENTRY VIEW WITH NEW CANOPY AND SIGNAGE



DECK VIEW FROM TABLES

Exterior Renderings

OPTION 1 - RENOVATION STUDY



DECK VIEW FROM BLEACHERS



WOMEN'S COMMUNITY LOCKER ROOM ENTRY



WOMEN'S COMMUNITY LOCKER ROOM

Interior Renderings

OPTION 1 - RENOVATION STUDY



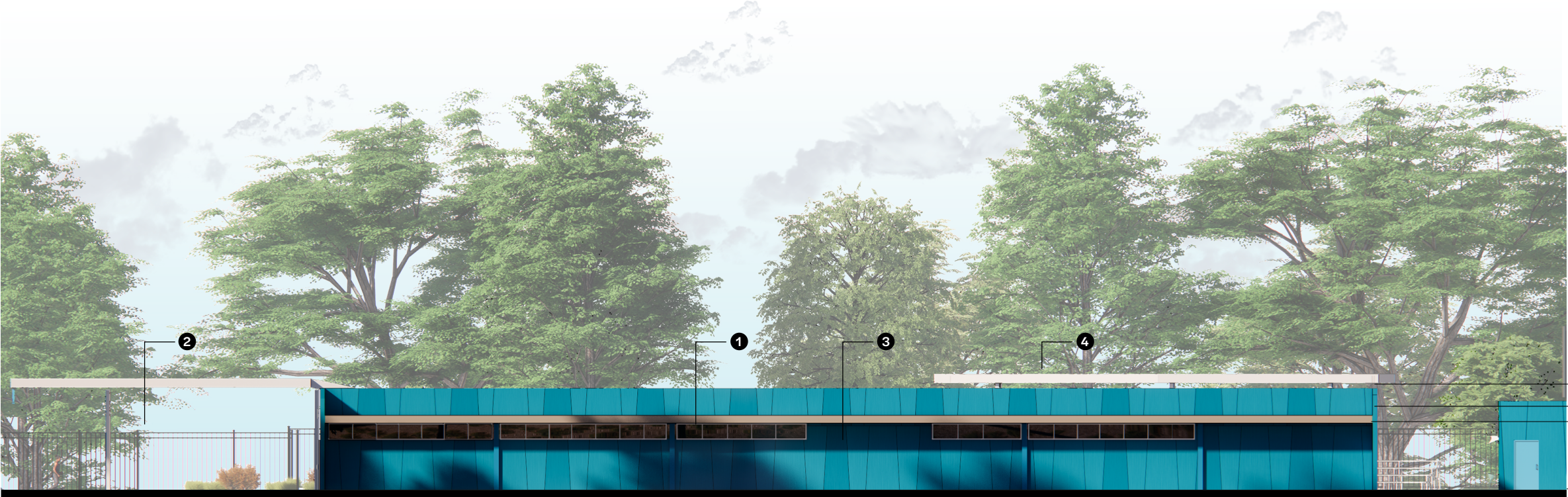
WOMEN'S SHOWER ROOM

Architectural Elevations

OPTION 1 - RENOVATION STUDY



BUILDING ELEVATION - EAST - MAIN BUILDING



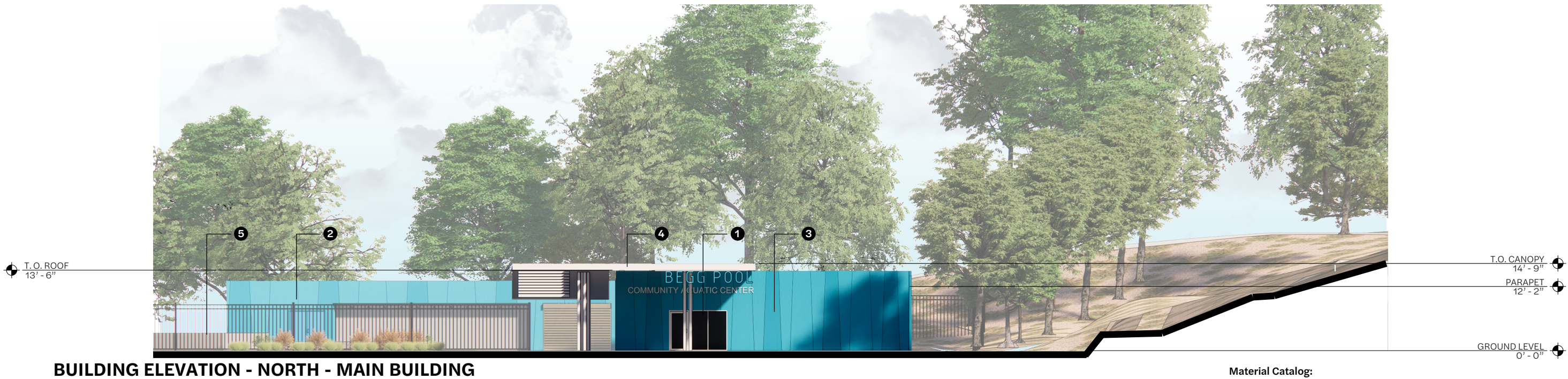
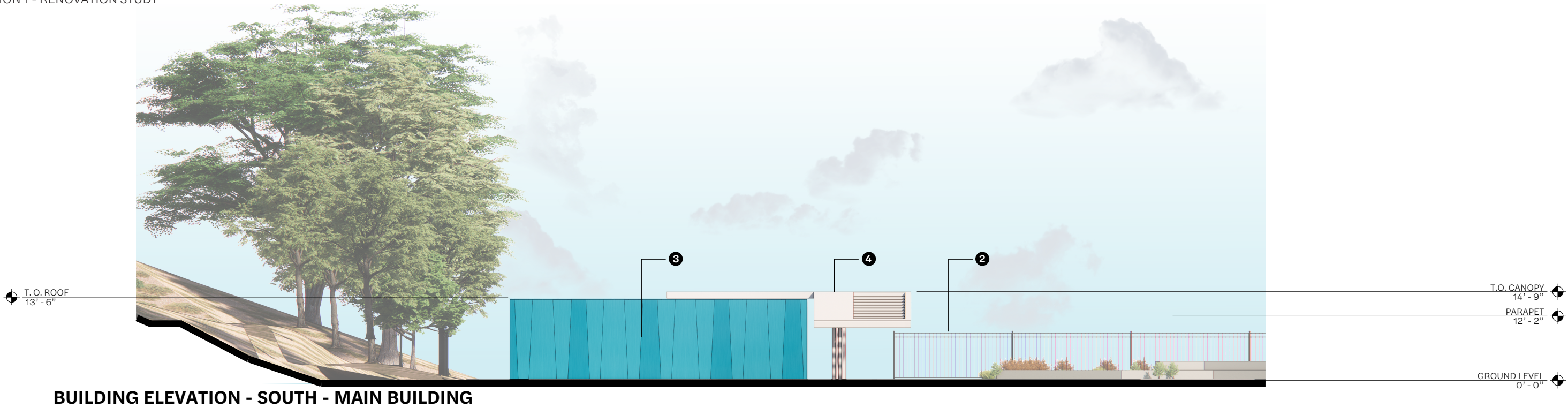
BUILDING ELEVATION - WEST - MAIN BUILDING

RENOVATION - OPTION 1
SCALE: 1/16" = 1'

- Material Catalog:
- 1 Dual-pane glass window
 - 2 Decorative metal fencing
 - 3 Rainscreen siding
 - 4 Painted steel canopy

Architectural Elevations

OPTION 1 - RENOVATION STUDY

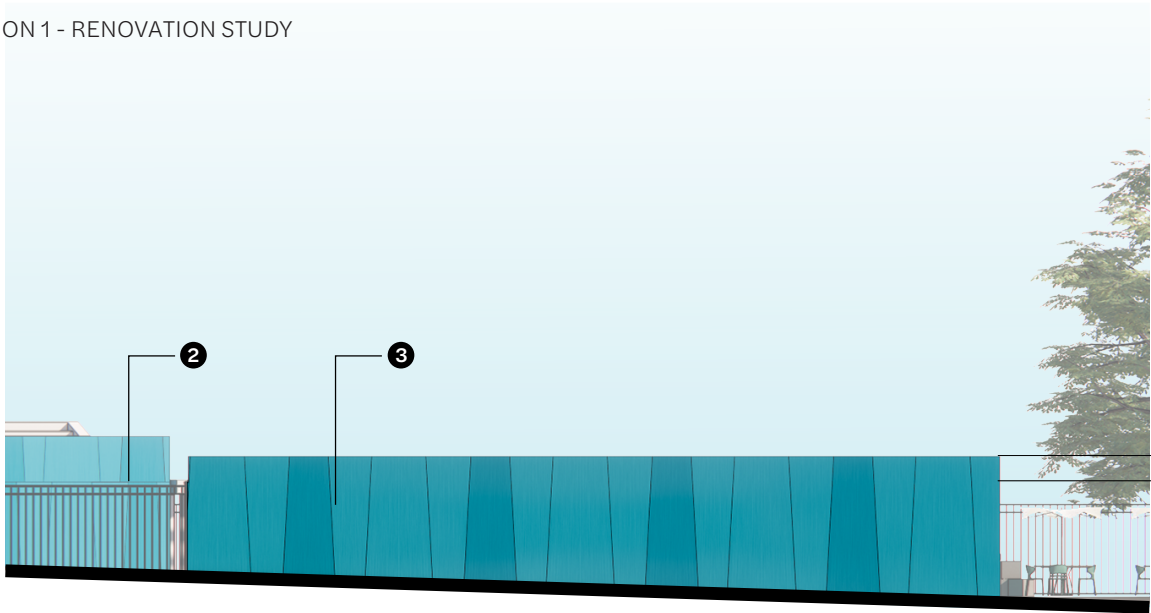


RENOVATION - OPTION 1
SCALE: 1/16" = 1'

- Material Catalog:**
- 1 Dual-pane glass window
 - 2 Decorative metal fencing
 - 3 Rainscreen siding
 - 4 Painted steel canopy
 - 5 Reinforced concrete seating

Architectural Elevations

OPTION 1 - RENOVATION STUDY

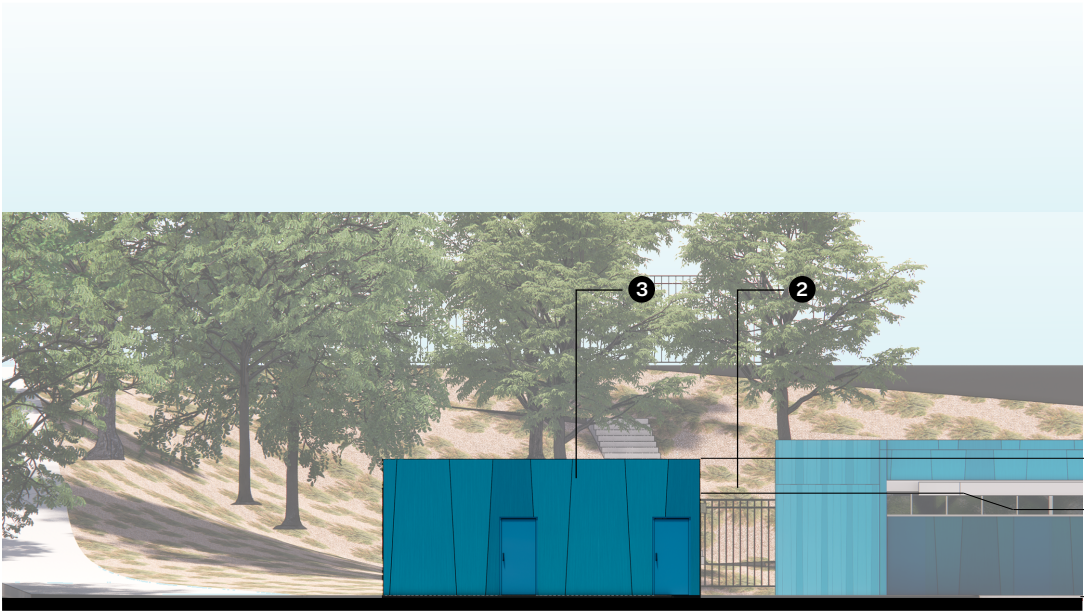


BUILDING ELEVATION - SOUTH - SUPPORT BUILDING

T. O. PARAPET
11' - 10"

T.O. ROOF
10' - 6"

GROUND LEVEL
0' - 0"

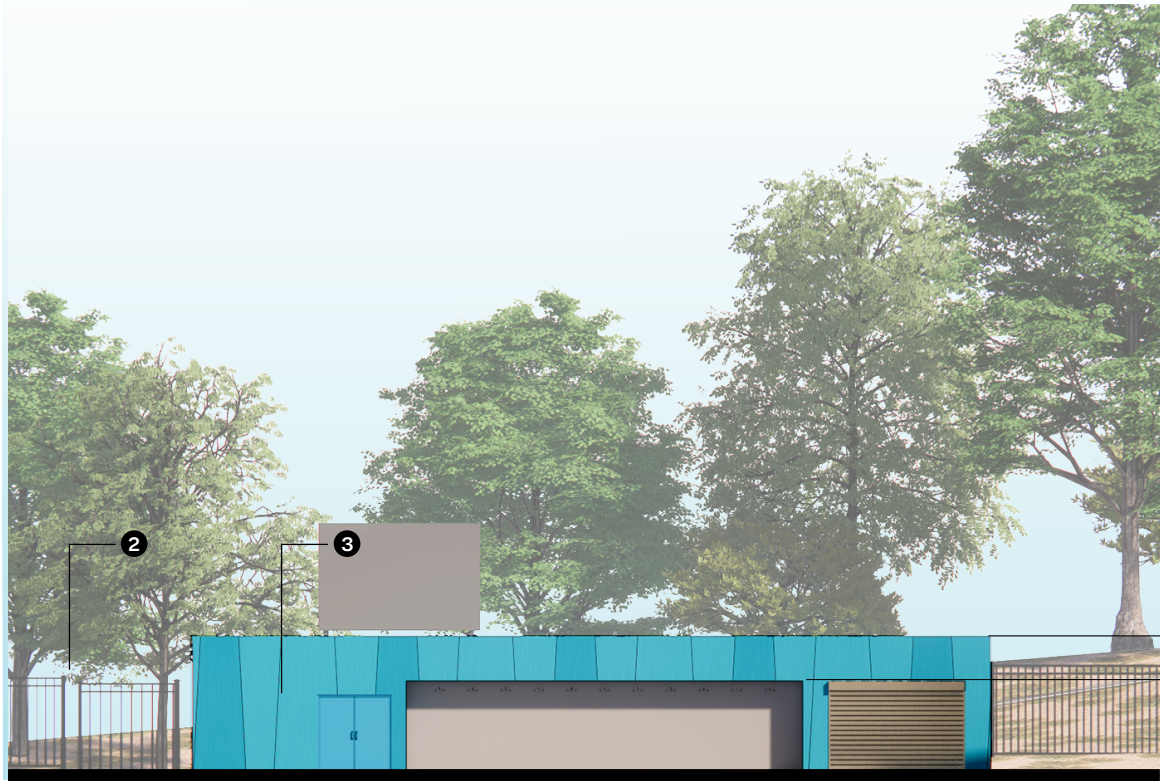


BUILDING ELEVATION - EAST - SUPPORT BUILDING

T. O. PARAPET
11' - 10"

T.O. ROOF
10' - 6"

GROUND LEVEL
0' - 0"

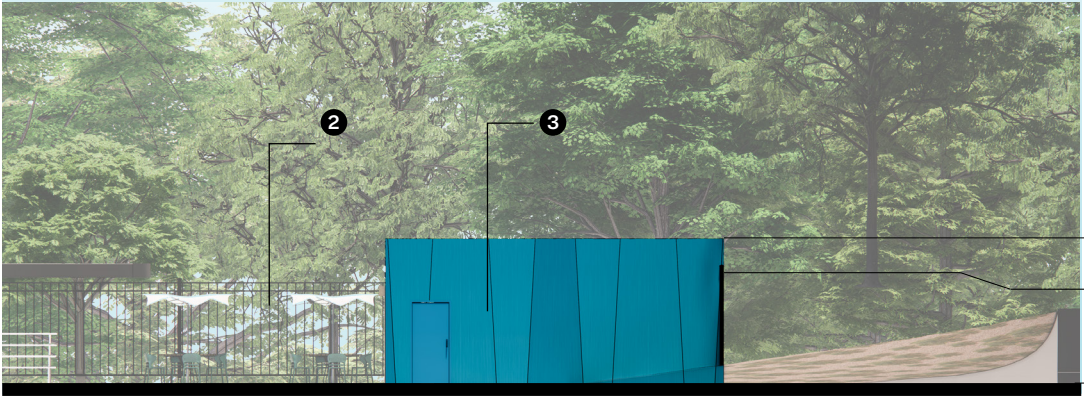


BUILDING ELEVATION - NORTH - SUPPORT BUILDING

T. O. PARAPET
11' - 10"

T. O. SHOWER ALCOVE
8' - 0"

GROUND LEVEL
0' - 0"



BUILDING ELEVATION - WEST - SUPPORT BUILDING

T. O. PARAPET
11' - 10"

T. O. PARAPET
10' - 6"

GROUND LEVEL
0' - 0"

RENOVATION - OPTION 1
SCALE: 1/16" = 1'

- Material Catalog:
- 1 Dual-pane glass window
 - 2 Decorative metal fencing
 - 3 Rainscreen siding
 - 4 Painted steel canopy
 - 5 Reinforced concrete seating

Floor Plan

OPTION 2 - NEW FACILITY STUDY



MAIN BUILDING

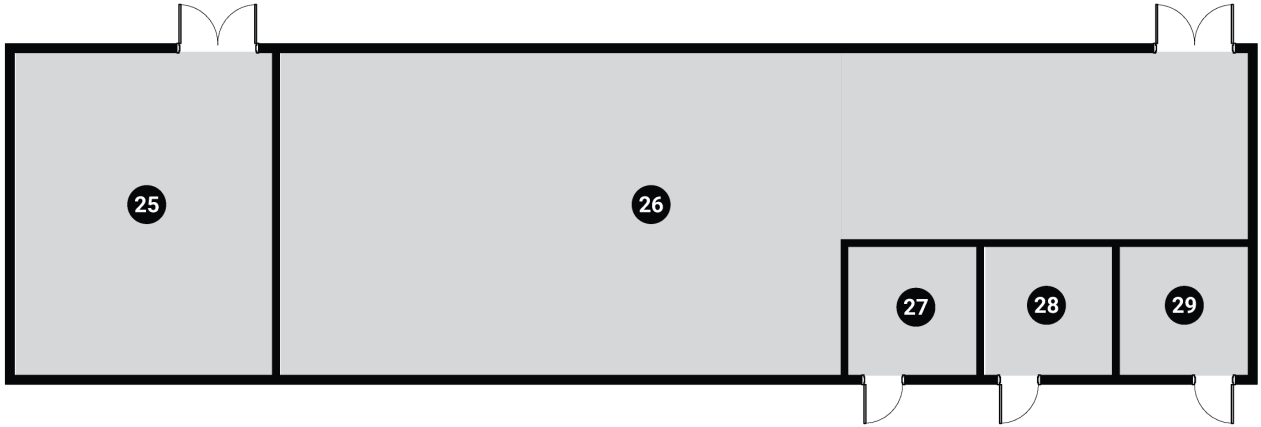
1	LOBBY / CHECK-IN	(SF)	500	14	WOMEN'S LOCKERS	(SF)	655
2	TRIAGE		100	15	WOMEN'S SHOWERS		320
3	BREAKROOM		280	16	OFFICE #1		105
4	OBSERVATION		380	17	OFFICE #2		105
5	STAFF DRESSING		445	18	FAMILY DRESSING #1		100
6	STORAGE		70	19	FAMILY DRESSING #2		100
7	OFFICE		325	20	STORAGE #1		140
8	LIFEGUARD TRAINING ROOM		800	21	STORAGE #2		140
9	MECHANICAL		280	22	MEN'S SHOWERS		320
10	ELECTRICAL		105	23	MEN'S LOCKERS		650
11	CUSTODIAL		100	24	MEN'S RESTROOM		300
12	DATA		135	A	DECK SHOWERS		
13	WOMEN'S RESTROOM		295				

POOL SUPPORT BUILDING

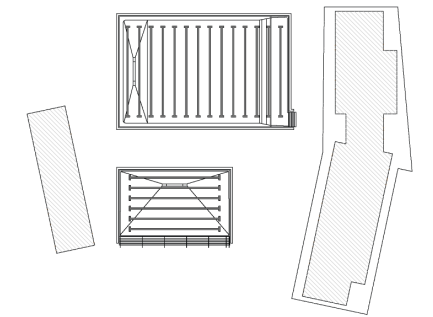
25	POOL STORAGE	(SF)	500	28	POOL CHEMICAL #2	(SF)	100
26	POOL MECHANICAL		1545	29	POOL CHEMICAL #3		100
27	POOL CHEMICAL #1		100				

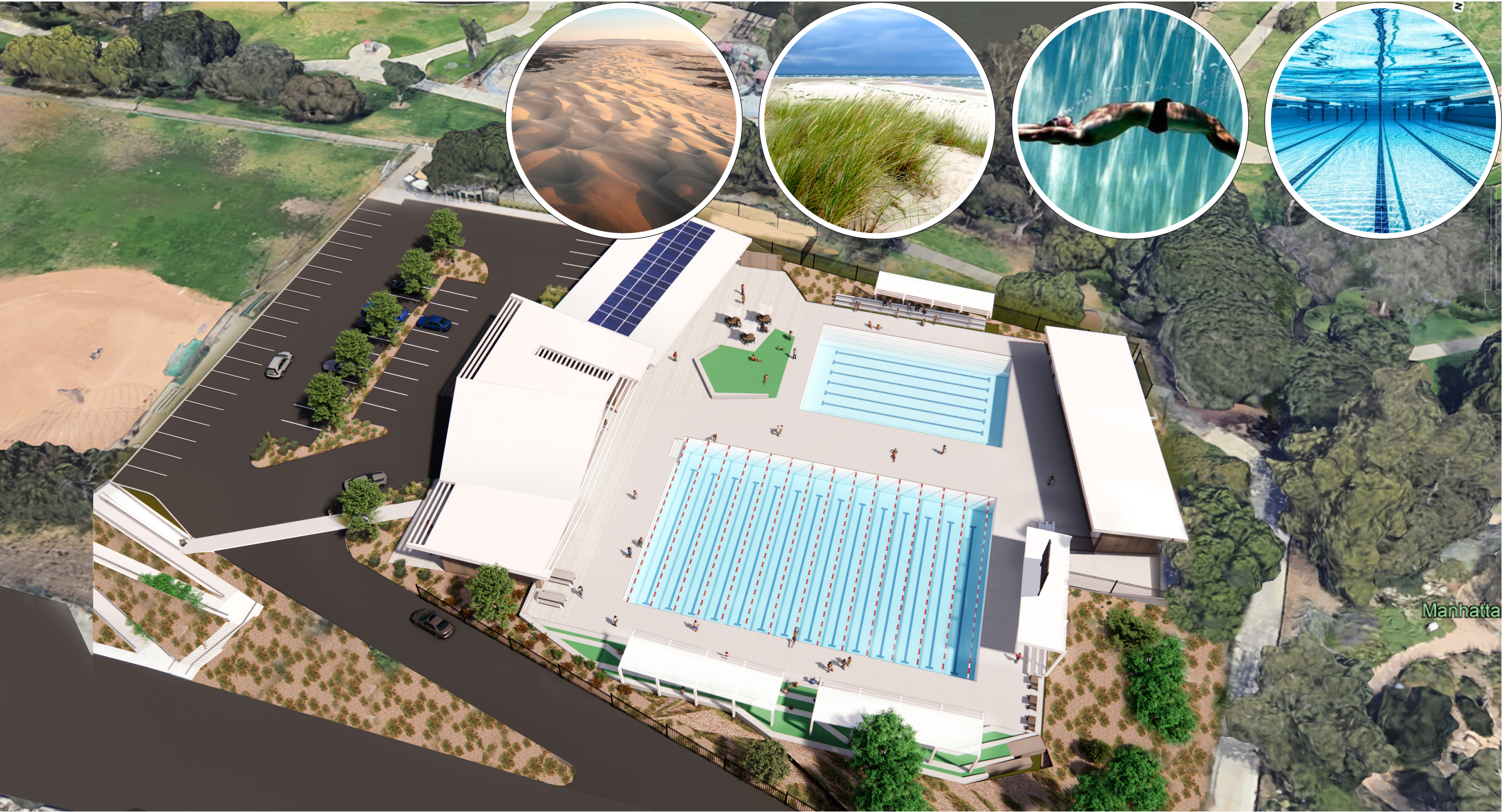
LEGEND

- RESTROOM/LOCKERS
- FACULTY OFFICES
- ADMINISTRATION
- BUILDING SERVICES
- POOL EQUIPMENT
- COMMON SPACE



KEY PLAN





Aerial Rendering View

OPTION 2 - NEW FACILITY STUDY



MAIN ENTRY VIEW FROM PARKING LOT



LOBBY LEADING TO POOL

Exterior Renderings

OPTION 2 - NEW FACILITY STUDY



VIEW FROM TIERED SEATING



MEN'S COMMUNITY LOCKER ROOM



MEN'S SINK AREA

Interior Renderings

OPTION 2 - NEW FACILITY STUDY



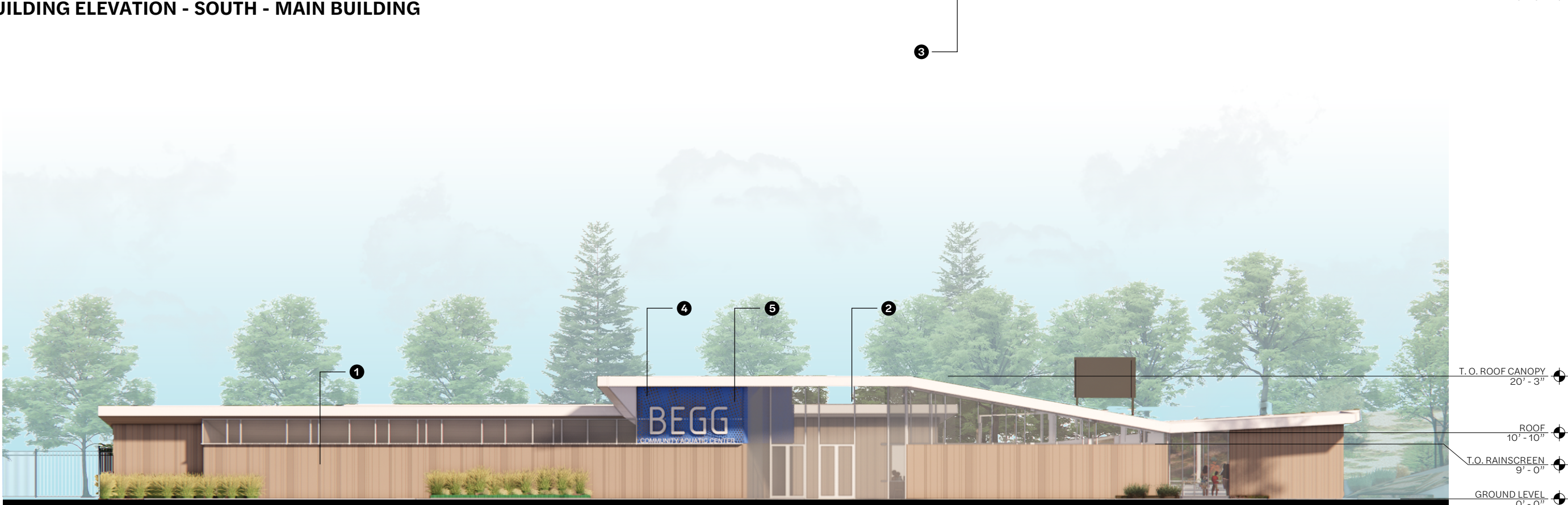
MEN'S SHOWER ROOM

Architectural Elevations

OPTION 2 - NEW FACILITY STUDY



BUILDING ELEVATION - SOUTH - MAIN BUILDING



BUILDING ELEVATION - NORTH - MAIN BUILDING

NEW FACILITIES - OPTION 2
SCALE: 1/16" = 1'

- Material Catalog:
- 1 Composite Panel Wall Finish

2 Window Glazing System

3 Composite Metal Fascia

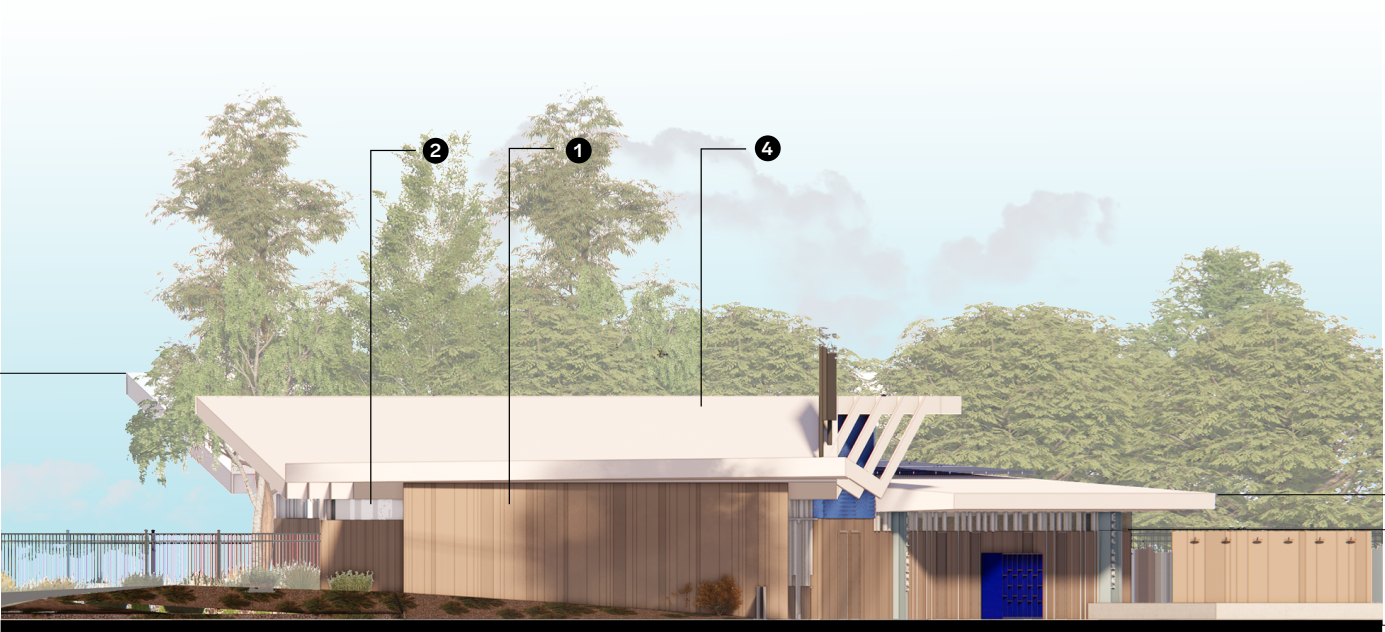
4 Cement Plaster Soffits

5 Custom Perforated Metal Entry Signage

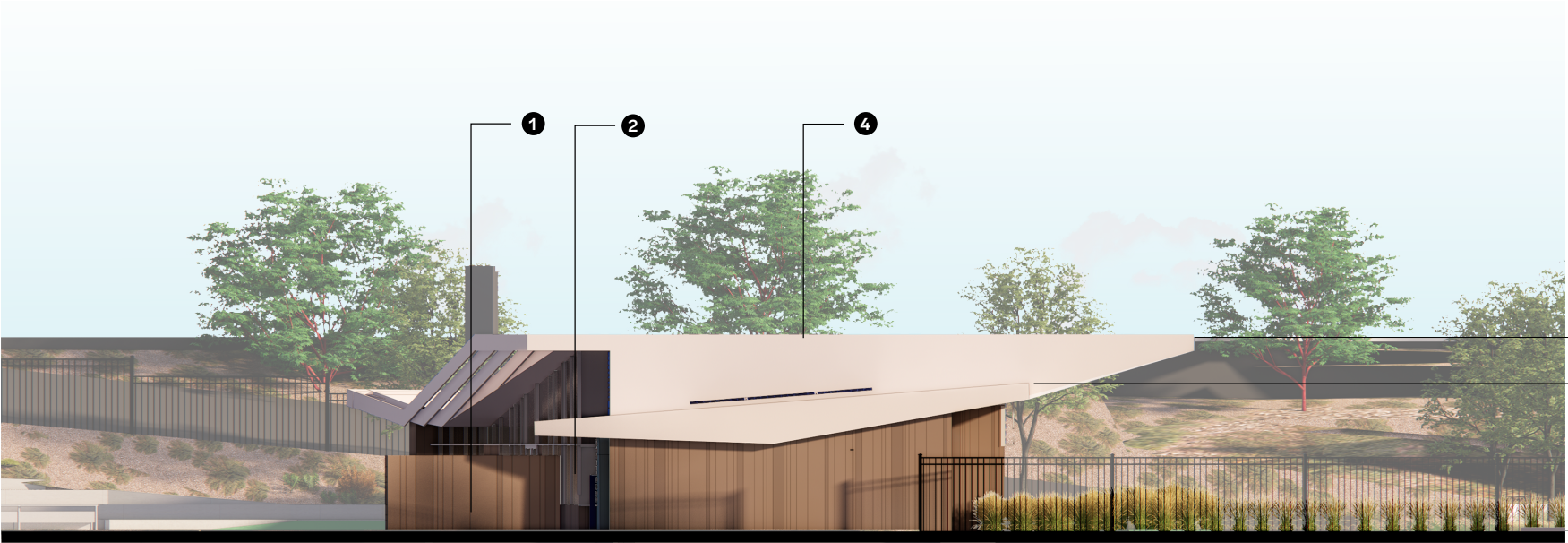
Architectural Elevations

OPTION 2 - NEW FACILITY STUDY

T.O. ROOF CANOPY
20' - 3"



BUILDING ELEVATION - WEST - MAIN BUILDING



BUILDING ELEVATION - EAST - MAIN BUILDING

NEW FACILITIES - OPTION 2
SCALE: 1/16" = 1'

- Material Catalog:
- 1 Composite Panel Wall Finish

2 Window Glazing System

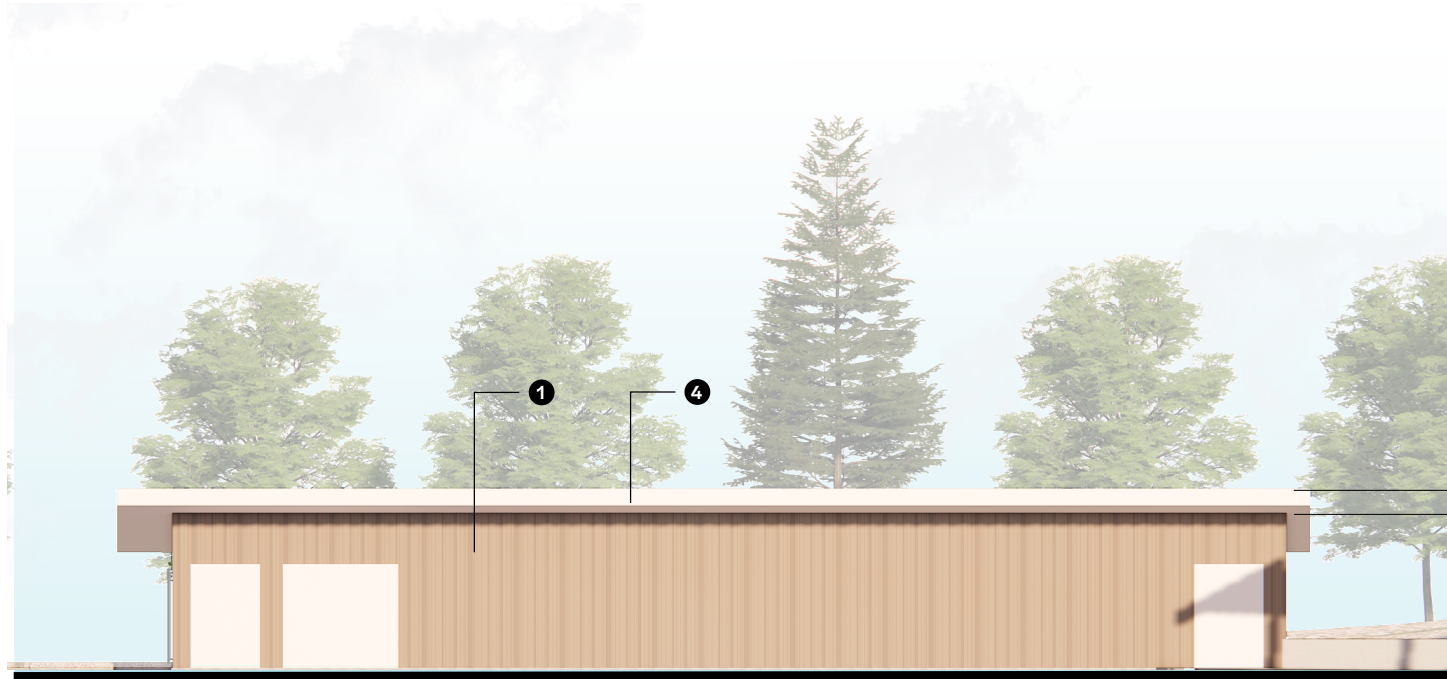
3 Composite Metal Fascia

4 Cement Plaster Soffits

5 Custom Perforated Metal Entry Signage

Architectural Elevations

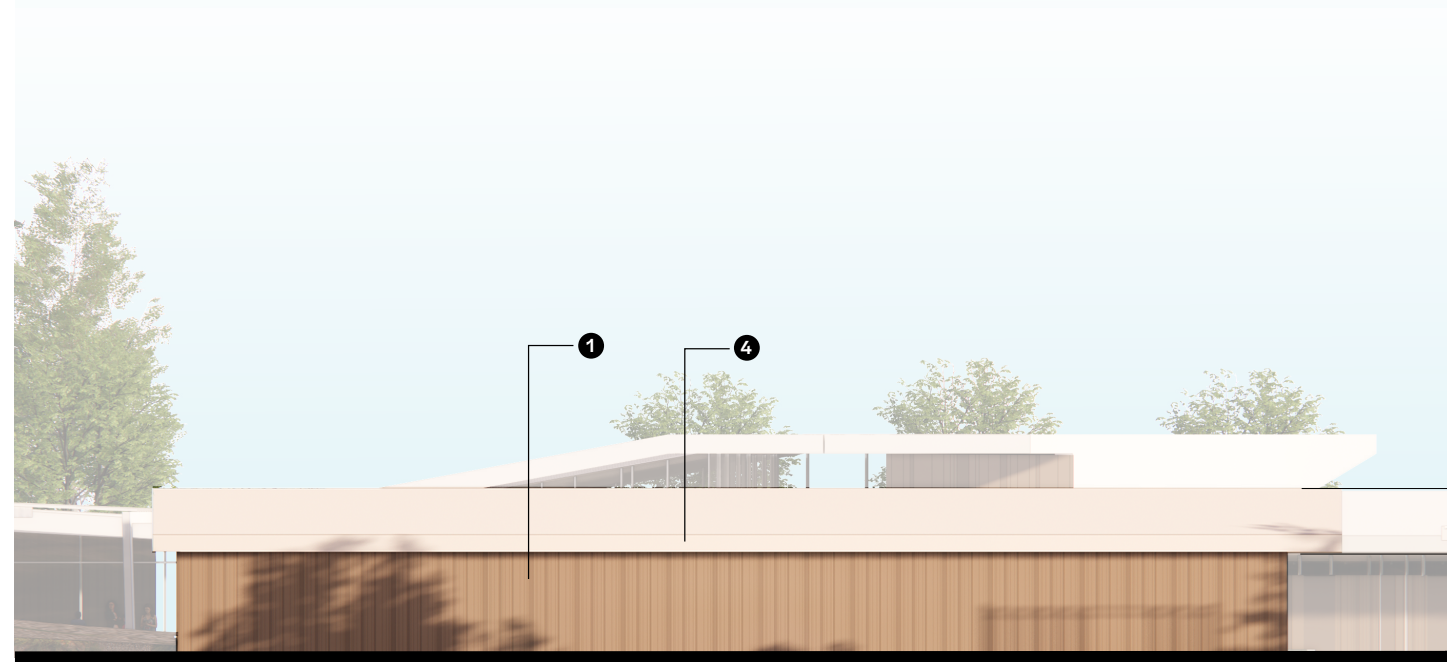
OPTION 2 - NEW FACILITY STUDY



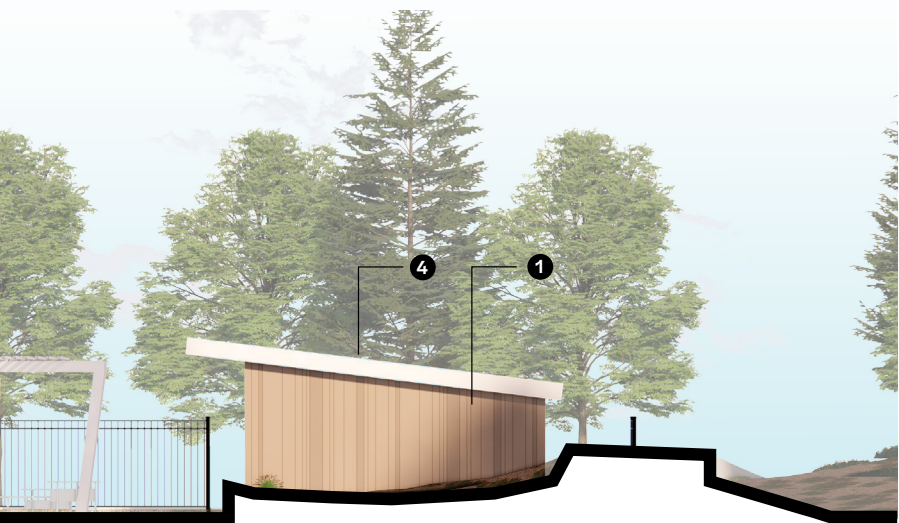
BUILDING ELEVATION - NORTH - SUPPORT BUILDING



BUILDING ELEVATION - EAST - SUPPORT BUILDING



BUILDING ELEVATION - SOUTH - SUPPORT BUILDING



BUILDING ELEVATION - WEST - SUPPORT BUILDING

NEW FACILITIES - OPTION 2
SCALE: 1/16" = 1'

- Material Catalog:
- | | |
|-------------------------------|---|
| 1 Composite Panel Wall Finish | 4 Cement Plaster Soffits |
| 2 Window Glazing System | 5 Custom Perforated Metal Entry Signage |
| 3 Composite Metal Fascia | |

Aquatics Basis of Design (BOD)



HMC
Architects

Aquatics BOD

OPTION 1 - RENOVATION STUDY

Pool Design Criteria:

Pool Water Surface Area	3,300 SF
Pool Perimeter	269 linear feet
Pool Depths	3'-5" to 3'-9"
Pool Volume	~ 88,492 gallons
Pool GPM	246 GPM (6-hour turnover)

Pool Design Narrative:

The renovation of the rec / teaching pool at the Begg facility includes the resurfacing of the pool and the replacement of the supporting decks and deck drainage. The pool is six (6) lanes and 25-yards x 42-feet. The pool dimensions and depths shall not change. The pool shall receive a new ADA compliant accessible lift to serve as the primary means of ADA access.

New mechanical and chemical equipment shall be purchased and installed in a new mechanical building. All circulation system piping for the pool shall be replaced.

The pool is designed to support the following programs:

- Middle School Physical Education Learn-To-Swim Programs
- Local / Club Swimming Practices
- Shallow Water Fitness Programs
- Infant, Youth, Teen and Adult Learn-To-Swim Programs
- Lap Swimming
- Recreational Swimming
- Party and Lane Rentals

Lanes shall remain the current width. New permanent tile lane markings to match the existing shall be on the bottom and ends of the pool per competitive requirements, with striping to designate lanes. New anchors to match the existing shall be provided at the ends of the pool for every lane. The pool features a rim-flow surface water collection system and in-pool lights that allow for safe night use. The in-pool lights shall be upgraded to LED lights.

The only two changes to the existing pool will be the addition of new walk-out stairs and a new code-compliant six-hour turnover.

Stairs are required in all public pools in California and the addition of them at Begg will facilitate ingress and egress and meet code.

The minimum turnover for a public pool in California is a six hours. Since the pool decks and mechanical and chemical systems are all being replaced, the project will lose its grandfathered status and will be forced to increase turnover rate. This will help provide better water quality for patrons.

Pool Construction Methods:

The existing plaster finish for the pool shall be removed down to original sound concrete / shotcrete. Any cracks shall be chipped out to a minimum of ¾" x ¾" and then filled with non-shrink grout. All exposed rebar, rust spots, etc. shall be exposed, bushed down to 1 ½" below finish surface, zinc coated, and filled flush with non-shrink grout. Remaining finishes shall be made ready to receive and be compatible with installation of new pool interior waterproof finishes.

Pool finishes shall match existing and consist of a new, rim-flow perimeter surface water collection system, a 150 millimeter (6") band of ceramic tile below waterline, a 300 millimeter (12") wide unglazed ceramic mosaic tile for lane lines and targets on the pool floor and walls, and a white quartz-based pool plaster for all other interior finishes.

The main drain frames and grates for the pool shall be removed and replaced with new V.G.B.-compliant frames and grates. The associated existing sumps shall be waterproofed with plaster prior to placing new grates.

The existing deck and deck drainage for the pool shall be removed and replaced, with care taken not to excavate underwater light conduits. Deck elevations shall have a maximum slope of 2.0%. Field verification of deck drain locations and existing points of connection to deck drain lines shall occur.

Pool Equipment:

Pool safety equipment, maintenance equipment, fittings, and deck equipment shall be installed in strict accordance with pertinent codes and regulations and the manufacturer's published recommendations, anchoring firmly and securely for long life under hard use.

Pool mechanical and chemical equipment shall conform to the following design criteria:

- A new circulation pump shall be horizontally mounted, end suction centrifugal, bronze-fitted, stainless steel shaft, with fuse coat epoxy on all wet surfaces. A new motor shall be totally enclosed, fan-cooled, premium efficiency, 1,150 RPM.
- A new filtration system shall be hi-rate sand with a flow rate not-to-exceed 15 gallons per minute / square foot of filter area. Filtration system shall be furnished complete with influent piping manifold, effluent piping manifold, backwash piping manifold, and all necessary valves and fittings as required for normal filtration and automated backwash operations. Influent and effluent pressure gauges, pool water temperature gauge, and flow meter with paddle-wheel flow sensor shall also be provided as part of a fully integrated system.
- Pool water shall be heated with the exact method of heating to be determined by the designer of record. The heating system could include one or more of the following options: natural gas, heat pumps, electric resistance, photovoltaic, thermal solar, heat exchangers, co-generation, and fuel cell

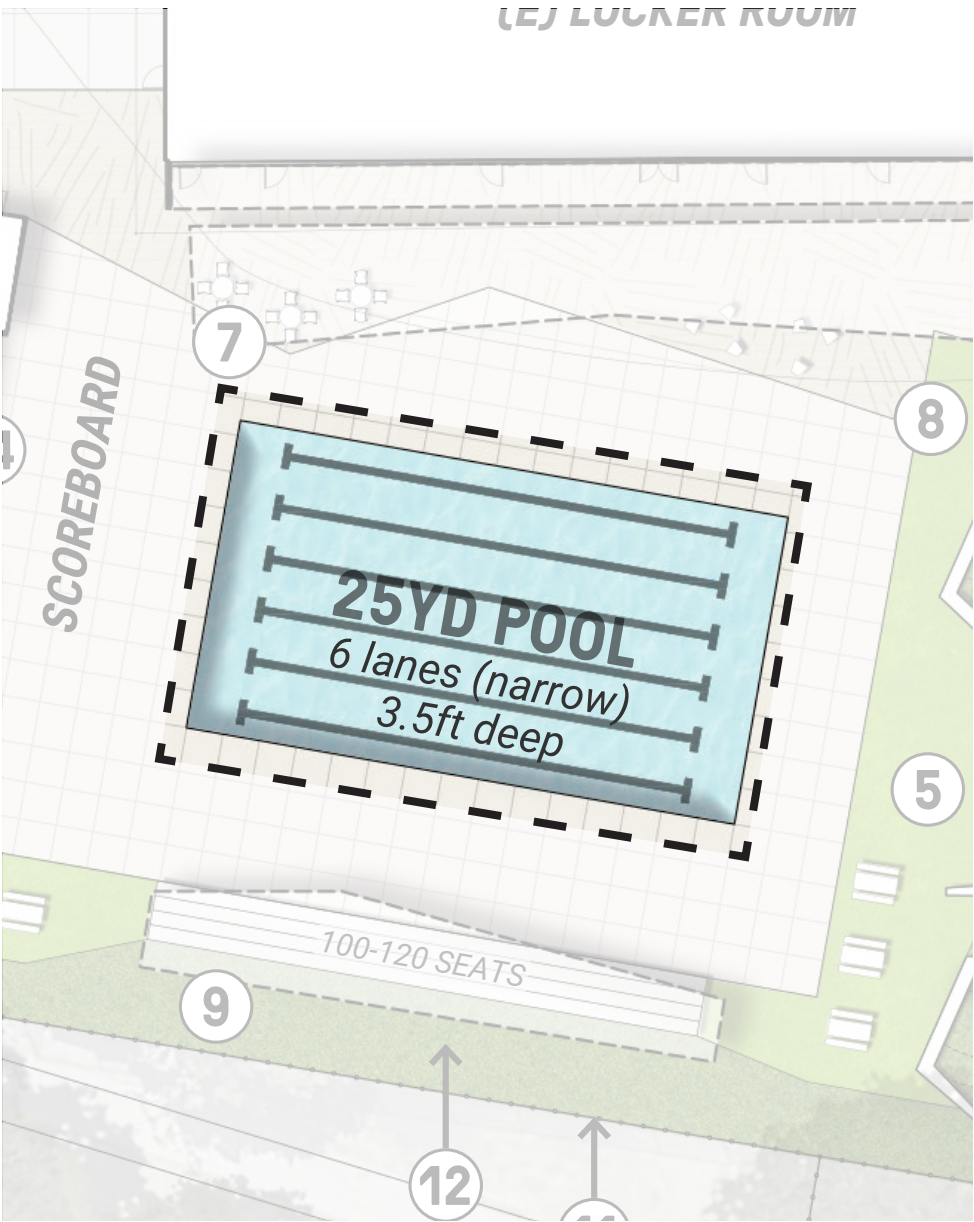
- New chemical treatment systems shall utilize either sodium hypochlorite (liquid chlorine) or a tablet calcium hypochlorite for primary disinfection. Any primary disinfectant feed system shall be capable of providing a constant in-pool chlorine residual of 1-15 parts per million. The pH shall be controlled to a reading of 7.2 - 7.6 through the utilization of either muriatic acid (liquid acid) or a tablet sodium bisulfate. Both new chemical feed systems shall be automatically controlled by a single chemical controller with the capacity of monitoring and continually adjusting ORP, PPM, and pH.

Pool Mechanical:

All new pool mechanical piping shall consist of Schedule 40 PVC for all below-grade piping and Schedule 80 PVC for all above-grade piping. New piping shall be sized for velocities not-to-exceed six feet per second (1.8 meters per second) for suction (return) piping and eight feet per second (2.4 meters per second) for discharge (supply) piping. All new underground piping shall have a minimum of 18" (450 millimeters) of earth cover. Provisions shall be made for automated filling of pool to compensate for water loss due to filter backwash operations and evaporation.

Pool Electrical:

All new pool electrical work shall include: conduit, conductors and breakers for all single phase electrical equipment; conduit, conductors and motor starters for all three-phase electrical equipment; and control circuitry and interface between circulation pump, filtration microprocessor, heating system, water chemistry controller and water level controller. New LED lighting fixtures shall be utilized for underwater lighting of the pool.



Aquatics BOD

OPTION 1 - RENOVATION STUDY
BATHER LOAD / TOILET FIXTURE COUNT

Pool Water Surface Area	3,300 SF
Total Water Surface Area	3,300 SF
<hr/>	
Total Bather Load*	220 people
Bathers, Men	110 people
Bathers, Women	110 people

Men’s Toilets	Men’s Urinals	Men’s Lavs	Men’s Showers	Women’s Toilets	Women’s Lavs	Women’s Showers	Drinking Fountains
2	2	1	2	2	1	2	1

*Bather Load / Fixture Count Calculations Based on Provisions Within Section 3115B / 3116B of California Building Code:

- 1. One bather for every 15 square foot of pool water surface area.
- 2. One toilet and one urinal for every 75 men.
- 3. One toilet for every 60 women.
- 4. One lavatory for every 80 bathers (either sex).
- 5. One shower for every 50 bathers (either sex).
- 6. One drinking fountain for the first 250 bathers; one additional drinking fountain for every 200 bathers thereafter.

Aquatics BOD

OPTION 2 - NEW FACILITY STUDY

Pool Design Criteria:

35-Meter Pool Water Surface Area	8,675 Square Feet
Competition Pool Perimeter	400 Linear Square Feet
Competition Pool Depths	3’-6” to 8’-0”
Competition Pool Volume	Approximately 373,112 Gallons
Competition Pool Turnover	1,036 GPM (6-Hour Turnover)
25 Yard / Teaching Pool Water Surface Area	3,825 Square Feet
25 Yard / Teaching Pool Perimeter	299 Linear Feet
25 Yard / Teaching Pool Depths	3’-6” to 4’-6”
25 Yard / Teaching Pool Volume	Approximately 114,444 Gallons
25 Yard / Teaching Pool Turnover	318 GPM (6-Hour Turnover)

Pool Design Narratives:

The new aquatics center at the Begg facility shall feature two distinct aquatic amenities: a 25-yard x 35-meter competition pool and a 6-lane x 25-yard shallow warm water swimming pool. Multiple bodies of water allows for variable temperatures and more clearly defined programs to be run simultaneously without concern of overlapping or interference. For any reason, if one needs to be shut down, the other pool can remain open and potentially accommodate overlapping programs. Having a second pool will also allow for warm-up and warm-down when competitions are held in the competition pool.

The mechanical and chemical equipment shall be located in a new mechanical building: complete with three (3) chemical rooms that have direct access to the outside for ease of deliveries.

35-Meter Pool:

- The Competition Pool is designed to support the following programs:
- 25-meter Competitive Swimming
 - 25-yard Competitive Swimming
 - Fitness Swimming
 - Lap / Recreational Swimming
 - Masters Swimming
 - 25-yard Floating Cage Competitive Water Polo
 - 25-yard Fixed Cage Competitive Water Polo
 - Inner Tube Water Polo
 - Competitive Underwater Hockey
 - Synchronized Swimming
 - Inner Tube Basketball
 - Kayak Lessons
 - Battleship
 - Paddle Board Lessons
 - Paddle Board Yoga
 - Scuba Lessons
 - Lifeguard Training
 - Red Cross Training
 - Public Safety Training
 - Deep Water Therapy Programs
 - Deep Water Physiology Programs

The pool shall feature fourteen, 25-yard

lanes. The 25-yard lanes shall be 8’-0” wide. Pool water shall be designed to maintain between 78-82 degrees. Permanent tile lane markings on the bottom and ends of the pool shall be provided per competitive requirements with black striping to designate the yard lanes and targets. Anchors shall be provided at the ends of the pool for every lane to provide flexibility with regards to chosen course and preferred side.

Pool water depths shall be 3’-6” at one end of the competition pool and a constant 8’-0” for the majority of the pool. The perimeter overflow system shall be a deck-level or rim-flow perimeter gutter.

The pool shall feature one fixed accessible lift as the primary means of ADA access and walkout stairs as the secondary means of ADA access. There shall be an additional anchor location for an accessible lift in the opposite end of the pool as well to provide access if needed in that portion of the pool with a movable ADA compliant lift.

25 Yard / Teaching Pool:

The Rec / Teaching Pool is designed to maximize the uses of community and therapy aquatics programming. This pool will have relatively shallow water and will be friendly for swimmers or bathers of all ability levels. The pool shall feature walk-out stairs on one side to facilitate easy access and programs for younger children. The pool is designed to support the following programs:

- Middle School Physical Education Learn-To-Swim Programs
- Local /Club Swimming Practices
- Shallow Water Fitness Programs
- Infant, Youth, Teen and Adult Learn-To-Swim Programs
- Lap Swimming
- Recreational Swimming
- Water Walking
- Warm-up and Warm-down during Competitive Events
- Inner Tube Water Polo
- Inner Tube Basketball
- Therapy Programs
- Water Volleyball
- Water Basketball
- Dive-in-Movies
- Party and Lane Rentals

The pool shall feature six, 25-yard lanes. The 25-yard lanes shall be 7’-0” wide. Pool water shall be designed to maintain between 84-88 degree. Pool water depth shall range from 3’-6” to 4’-6”. The perimeter overflow system shall be a rim-flow perimeter gutter.

The pool shall feature one fixed accessible lift as the primary means of ADA access and walkout stairs as the secondary means of ADA access.

Aquatics BOD (CTD.)

OPTION 2 - NEW FACILITY STUDY

Pool Construction Methods:

All pools shall be machine-excavated and hand-trimmed where permitted by soil conditions. If soil conditions are not suitable for using the excavation as a form, pool shall be over-excavated and formed (one-sided form work). Upon completion of pool structure curing period, forms shall be stripped, and engineered backfill shall be compacted to 95% maximum density provided to pool deck sub-grade elevation.

Finish sub-grade elevation of pool floors shall be lowered by a minimum of 18” (450 Millimeters) to accommodate a layer of drain rock within the excavation and provide a working mat during construction. Perforated pipes and a sounding well with submersible pump(s) shall be provided to mitigate potential ground water migration into the excavation during construction phase, and hydrostatic relief valves shall be installed within pool main drain sumps (minimum of 2 each) to mitigate potential for hydrostatic pressure when pool is drained post-construction.

Pool structures shall be steel-reinforced, pneumatically-applied concrete (shotcrete) with a minimum compressive strength of 4,000 pounds per square inch. Shotcrete finish shall be compatible with installation of pool interior waterproof finishes.

Pool finishes shall consist of a rim-flow gutter spanning over a continuous perimeter gutter system, a 6” band of ceramic tile below waterline on both pools, 12” wide unglazed ceramic mosaic tile lane lines and targets on the pool floor and walls, and white marble or quartz-based pool plaster for all other interior pool finishes for both pools.

Pool Equipment:

Pool safety equipment, maintenance equipment, fittings, and deck equipment shall be installed in strict accordance with pertinent codes and regulations and the manufacturer’s published recommendations, anchoring firmly and securely for long life under hard use. Pool mechanical and chemical equipment shall conform to the following design criteria:

- Circulation pumps shall be horizontally mounted end suction centrifugal pumps, bronze-fitted, stainless steel shaft, with fuse coat epoxy on all wet surfaces. Motors shall be totally enclosed, fan-cooled, premium efficiency, 1,150 RPM.
- Filtration systems shall be hi-rate sand with a flow rate not-to-exceed 15 gallons per minute / square foot of filter area. Filtration system shall be furnished complete with influent piping manifold, effluent piping manifold, backwash piping manifold, and all necessary valves and fittings as required for normal filtration and automated backwash operations. Influent and effluent pressure gauges, pool water temperature gauges and flow meter with paddlewheel flow sensor shall also be provided as part of a fully integrated system.
- Pool water shall be heated, with the exact method of heating to be determined by the designer of record. The heating systems could include one or more of the following options: natural gas, heat pumps, electric resistance, photovoltaic, thermal solar, heat exchangers, co-generation, and fuel cell.

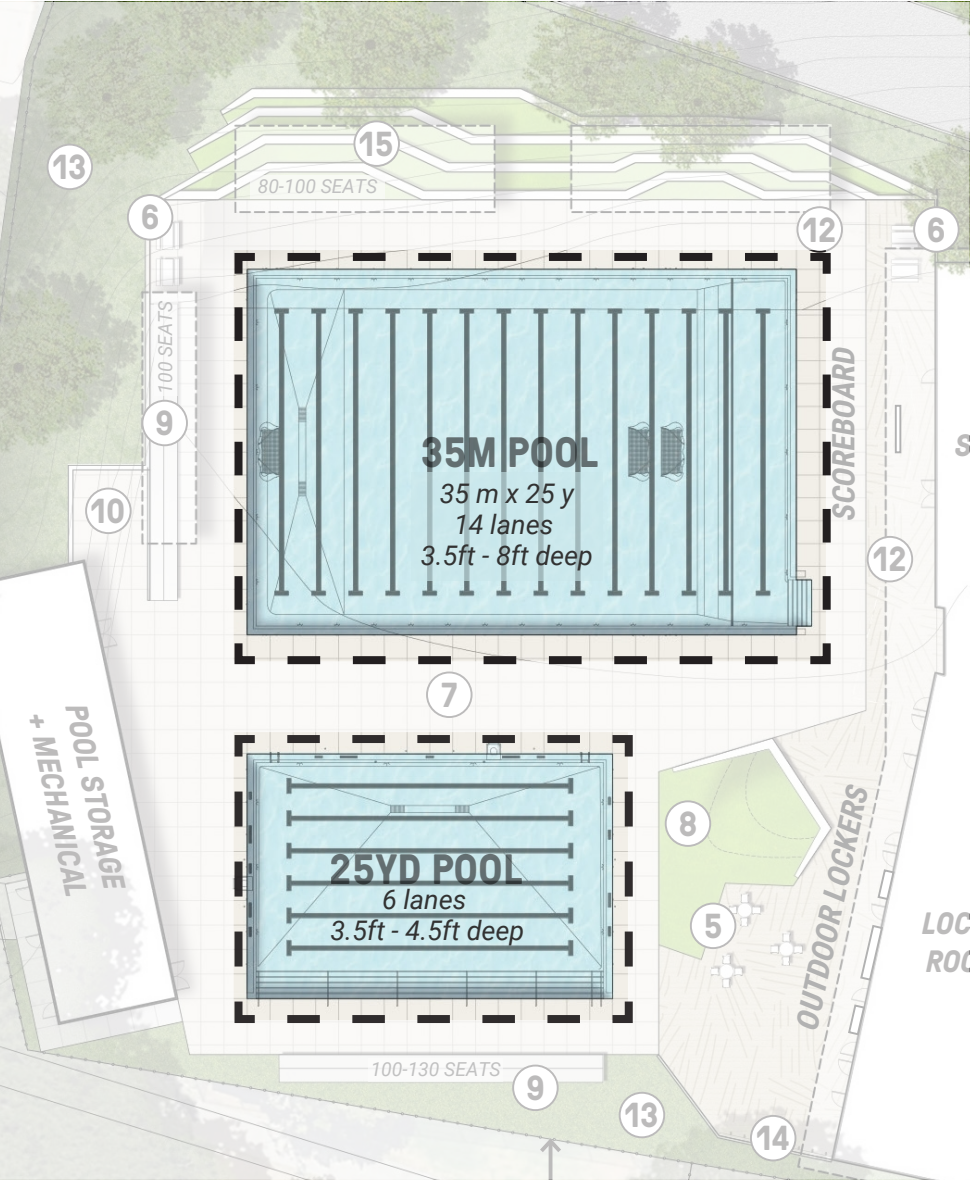
- Chemical treatment systems shall utilize either sodium hypochlorite (liquid chlorine) or a tablet calcium hypochlorite for primary disinfection. Any primary disinfectant feed system shall be capable of providing a constant in-pool chlorine residual of 1-15 parts per million. The pH shall be controlled to a reading of 7.2 - 7.6 through the utilization of either muriatic acid (liquid acid) or a tablet sodium bisulfate. The alkalinity shall be controlled through the utilization of cryogenic carbon dioxide. The chemical feed systems shall be automatically controlled by a single chemical controller with the capacity of monitoring and continually adjusting ORP, PPM, pH and alkalinity.

Pool Mechanical:

All pool mechanical piping shall consist of Schedule 40 PVC for all below grade piping and Schedule 80 PVC for all above grade piping. Piping shall be sized for velocities not-to-exceed six feet per second (1.8 meters per second) for suction (return) piping and eight feet per second (2.4 meters per second) for discharge (supply) piping. All underground piping shall have a minimum of 18” (450 millimeters) of earth cover. Provisions shall be made for automated filling of pools to compensate for water loss due to filter backwash operations and evaporation.

Pool Electrical:

All pool electrical work shall include: conduit, conductors and breakers for all single phase electrical equipment; conduit, conductors and motor starters for all three phase electrical equipment; and control circuitry and interface between circulation pumps, filtration microprocessors, heating systems, water chemistry controllers and water level controllers. LED lighting fixtures shall be utilized for underwater lighting of the pools.



Aquatics BOD

OPTION 2 - NEW FACILITY STUDY
BATHER LOAD / TOILET FIXTURE COUNT

Rec Pool Water Surface Area	3,825 SF
35-Meter Pool Water Surface Area	8,675 SF
<hr/>	
Total Water Surface Area	12,500 SF
Total Bather Load*	833 people
Bathers, Men	417 people
Bathers, Women	417 people

Men's Toilets	Men's Urinals	Men's Lavs	Men's Showers	Women's Toilets	Women's Lavs	Women's Showers	Drinking Fountains
6	6	5	8	7	5	8	4

*Bather Load / Fixture Count Calculations Based on Provisions Within Section 3115B / 3116B of California Building Code:

- 1. One bather for every 15 square foot of pool water surface area.
- 2. One toilet and one urinal for every 75 men.
- 3. One toilet for every 60 women.
- 4. One lavatory for every 80 bathers (either sex).
- 5. One shower for every 50 bathers (either sex).
- 6. One drinking fountain for the first 250 bathers; one additional drinking fountain for every 200 bathers thereafter.

Landscape Basis of Design (BOD)



HMC
Architects

Landscape BOD

EXISTING FACILITY &
OPTION 1 - RENOVATION STUDY

Existing Vegetation, Topography, and Soil Conditions:

The Begg Pool facility, situated in a coastal environment on the western edge of Polliwog Park in Manhattan Beach, features sparse existing vegetation with fallow grasses and volunteer weeds on perimeter slopes. Turf grass borders the existing pool deck, while ficus and pine trees border the east side of the site, acting as a buffer between Polliwog Park to the east and the Manhattan Beach Botanical Garden to the south. The topography of the site slopes down from Peck Ave towards the east, resulting in a steep entry drive and erosion challenges along the hillside. The existing pool facility/deck and adjacent parking lot is relatively flat with insignificant grade changes. Soil conditions predominantly comprise of sandy loam, typical of coastal regions, providing good drainage but requiring special attention to water retention and erosion control measures due to the site’s steep slopes.

The design team is currently pursuing two options at this preliminary design stage. Option 1 is to renovate the existing facility to modernize the space as well as resolve numerous issues that city staff are facing. Option 2 is to demolish the existing building and pool infrastructure and replace it with a new facility.

Existing Outdoor Program:

The existing Begg Pool facility includes a 3,160 SF lap pool, various outdoor program accompanied the pool including:

- Concrete Pool Deck (3,765 SF)
- Usable Grass Lawn (total 9,800 SF; 3,300 SF of which is secured behind fencing).
- Shaded Outdoor Instructional/ Meeting Area (2,100 SF)
- 6 Movable Picnic Tables
- Outdoor Storage Area (1,500 SF)
- Chain-link Security Fencing

Existing Pedestrian and Vehicular Access:

Pedestrian access to the Begg Pool facility is shared with vehicular traffic and does not meet current accessibility standards. When accessing from Peck Ave and/or the public right of way, pedestrians must utilize the narrow and steep access road shared with vehicles or enter from Polliwog Park. The access from Polliwog Park is also important as it serves as the primary path of travel to the Middle School.

Vehicular access to the Begg Pool facility is from Peck Ave, and is limited to a shared one-way (10-12FT wide) access road. In addition to its limited width, the drive is also steep, making it difficult to see on-coming vehicles. The sites parking lot includes 68 total parking spaces (4 accessible stalls) and no electric vehicle stalls. The current layout provides a circular flow and does not provide a formal drop-off zone. The parking lot also serves the Begg Field and Polliwog Park Dog Park.

Proposed Site Improvements (Option 1):

Enhanced Site Access and Accessibility: A new accessible pedestrian ramp and stairs will provide a dedicated and safe walkway for patrons to access the facility from Peck Ave. Widening the access road from Peck Ave to 24’ feet allows for adequate width for two-way traffic and fire truck access.

- Entry Plaza / Drop-Off: The renovated facility will also include an entry plaza with dedicated curbside drop-off. The plaza will serve as a gathering space and allow for classes to convene prior to entering the facility. A large canopy structure will provide shade on the plaza and extend into the facility over a portion of the pool deck. The plaza will also include dedicated bike parking and be paved with enhanced/decorative concrete or pavers.
- Enhanced Pool Deck: A new concrete pool deck will replace the existing one. Enhanced concrete and/or pavers will be adjacent to the renovated locker room building and be shaded by a new shade structure. New tables and chairs will provide additional shaded seating areas. The new pool storage and mechanical room façade will also serve as the location for outdoor showers south of the pool.

- The Huddle: Replacing the existing flat turf grass, new artificial turf, gentle mounds, and terraces seat walls will create a 3,000 SF flexible-use area north of the pool for spectators, classes and/or events. The added mounds and terraces will increase visibility of the pool and create a more dynamic space for visitors. Movable picnic tables will be provided on the artificial turf for added seating and table space.
- Picnic Lawn: Additional artificial turf area to the southeast of the pool will provide area for small gathering and seating. Furnishing would include picnic tables and/or movable tables and chairs.
- Bleachers with Shade: New fixed bleachers would be added to the east side of the pool, providing capacity for 100-120 individuals. A new fixed shade structure will accompany the bleacher seating to provide mid-day shade.

- Security: New security fencing will be constructed around the renovated pool facility. A public access gate will be located to the north providing access from the Entry Plaza to the renovated pool deck. An additional gate will be provided to the south for maintenance use only.
- Outdoor Storage: New retaining walls and paving will provide a renovated outdoor storage space south of the locker room building.
- Parking: The renovated parking lot will include designated accessible parking spaces, EV charging stations and improved pedestrian pathways to ensure safe and convenient access for all patrons. Total proposed parking stalls equate to 54. Per California building code, 3 stalls will be Accessible, 1 Van Accessible, 13 EV Capable Spaces, and 3 Electric Vehicle Service Equipment (EVSE) Spaces.

Landscape BOD

OPTION 2 - NEW FACILITY STUDY

Proposed Site Improvements (Option 2):

- Enhanced Site Access and Accessibility: A new sidewalk along Peck Ave, will direct pedestrians to a new accessible ramp and stairs north of the entry drive, creating a safe and dedicated pedestrian walk. Widening the access road from Peck Ave to 24’ feet allows for adequate width for two-way traffic and fire truck access.
- Entry / Drop-Off: The new facility will also include a dedicated curbside drop-off area, with enhanced decorative paving that compliments the building façade. The building’s overhead canopy will also provide shade over the drop-off and building entry. Dedicated bike parking racks will be provided and in view of the lobby.
- The Bluff: Utilizing the existing slope, a dynamic seating area will be created to provide patrons a unique viewing experience over the entire pool deck. Dual-purpose landscape walls will terrace and retain the slope, providing seating opportunities at various vantage points. Between the landscape walls, large portions of artificial turf and low maintenance planting will create additional places for people to gather, encouraging patrons to set up chairs, layout beach towels and/or picnic.
- Enhanced Pool Deck: A new larger concrete pool deck will surround the two new pools. Enhanced concrete and/or pavers will be adjacent to the new locker room building and will be furnished with tables and chairs for added seating areas. Outdoor showers will be provided to the east side of the pool deck adjacent to the locker room entrances.

- The Huddle: A flexible and sloped artificial turf lawn will be located north of the pools to create an engaging gathering place between the two. The added topography will increase visibility of the pool and create a more dynamic space for visitors. Retaining seat walls will provide additional seating opportunities outside of the lobby and locker rooms. Movable tables and chairs will also be provided.
- Bleachers with Shade: Bleachers along the south side of the 35M pool and east side of the 25YD pool will provide capacity for 200-260 individuals. A fixed shade structure will accompany the bleachers to the south, maximizing the usable shade area.
- Security: New security fencing will be constructed around the new pool facility. A gate will be provided to the south for maintenance use only.
- Outdoor Storage: Adjacent to the new pool storage and mechanical building, a retaining wall and concrete paving will create a place for outdoor storage behind the southern bleachers.
- Parking: The renovated parking lot will include designated accessible parking spaces, EV charging stations and improved pedestrian pathways to ensure safe and convenient access for all patrons. The total proposed parking stalls equate to 48. Per California building code, 2 stalls are Accessible, 1 Van Accessible, 8 EV Capable Spaces, and 2 EVSE.

Proposed Grading, Irrigation and Landscape Improvements:

- Grading: Adjustments to existing grades will be made to improve drainage, minimize cut/fill and create terraced landscapes, maximizing views and usability while ensuring stability of planted slopes.
- Irrigation: A new water-efficient irrigation system, utilizing drip irrigation and weather-based controllers, will be installed to support the establishment of drought-tolerant vegetation and minimize water usage.
- Landscaping: A mix of climate-adapted and native coastal plants, including salt-tolerant species, will be selected to create a resilient and sustainable landscape, reducing the need for supplemental watering and chemical inputs into the soil. Additional considerations will be made for plant and tree selection to mitigate maintenance concerns, such as avoiding deciduous and messy tree species.

Site Design Vision

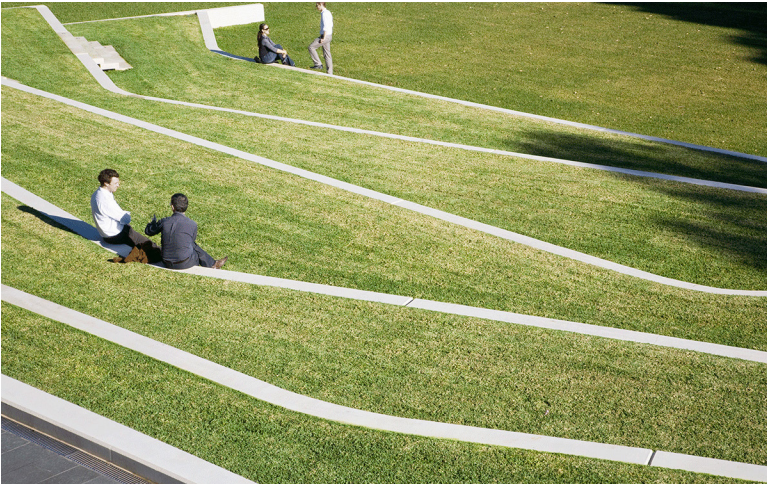


***BUILT ON
THE DUNES***



Exterior Program

THE BLUFF
Terraced Seating + Lawn



THE HUDDLE
Flexible Lawn + Seating



GATHERING
Bleachers + Tables and Chairs

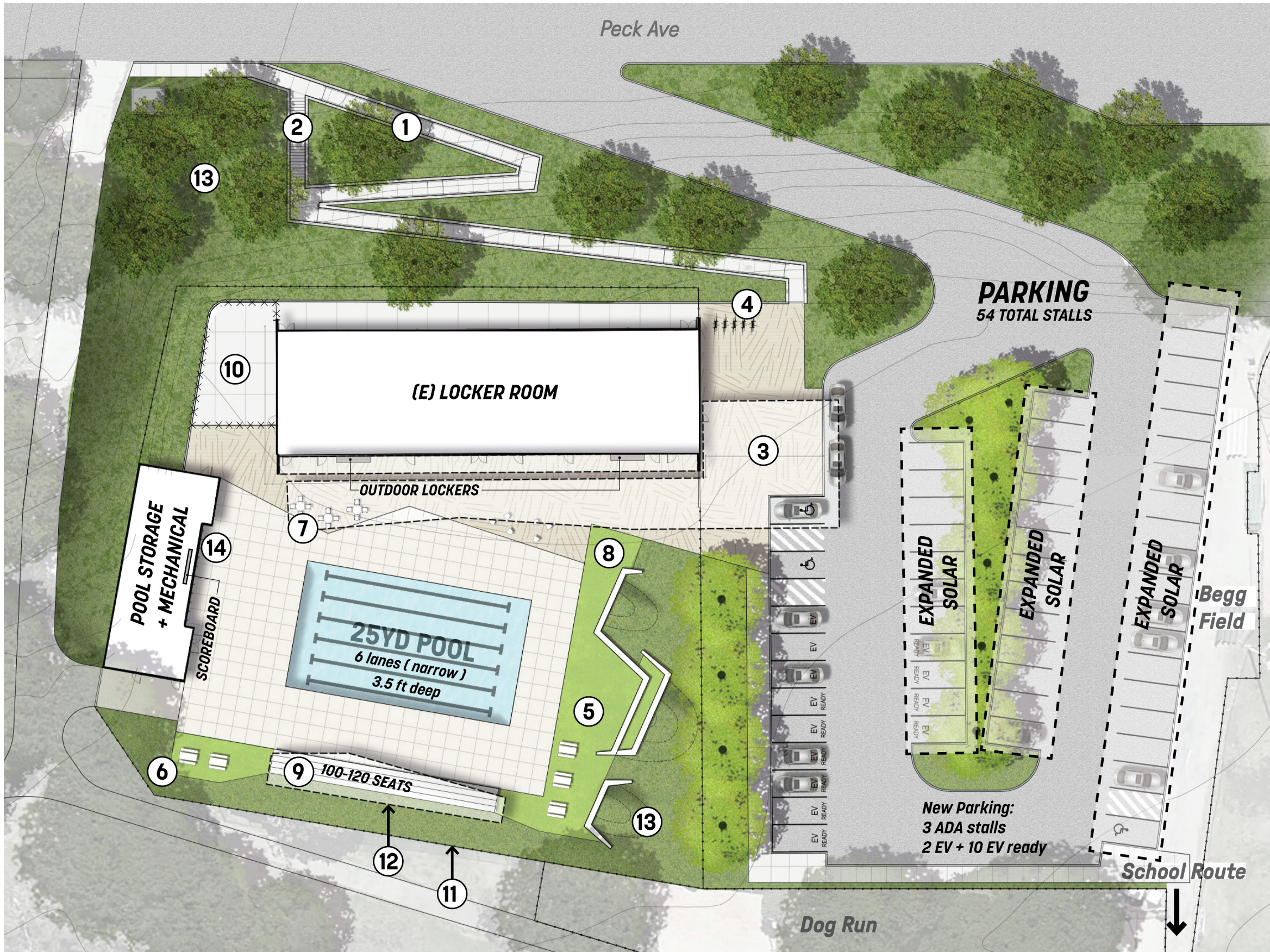




native - climate adapative - low maintenance - seasonal

Site Program

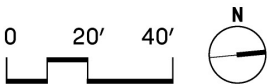
OPTION 1 - RENOVATION STUDY



LEGEND

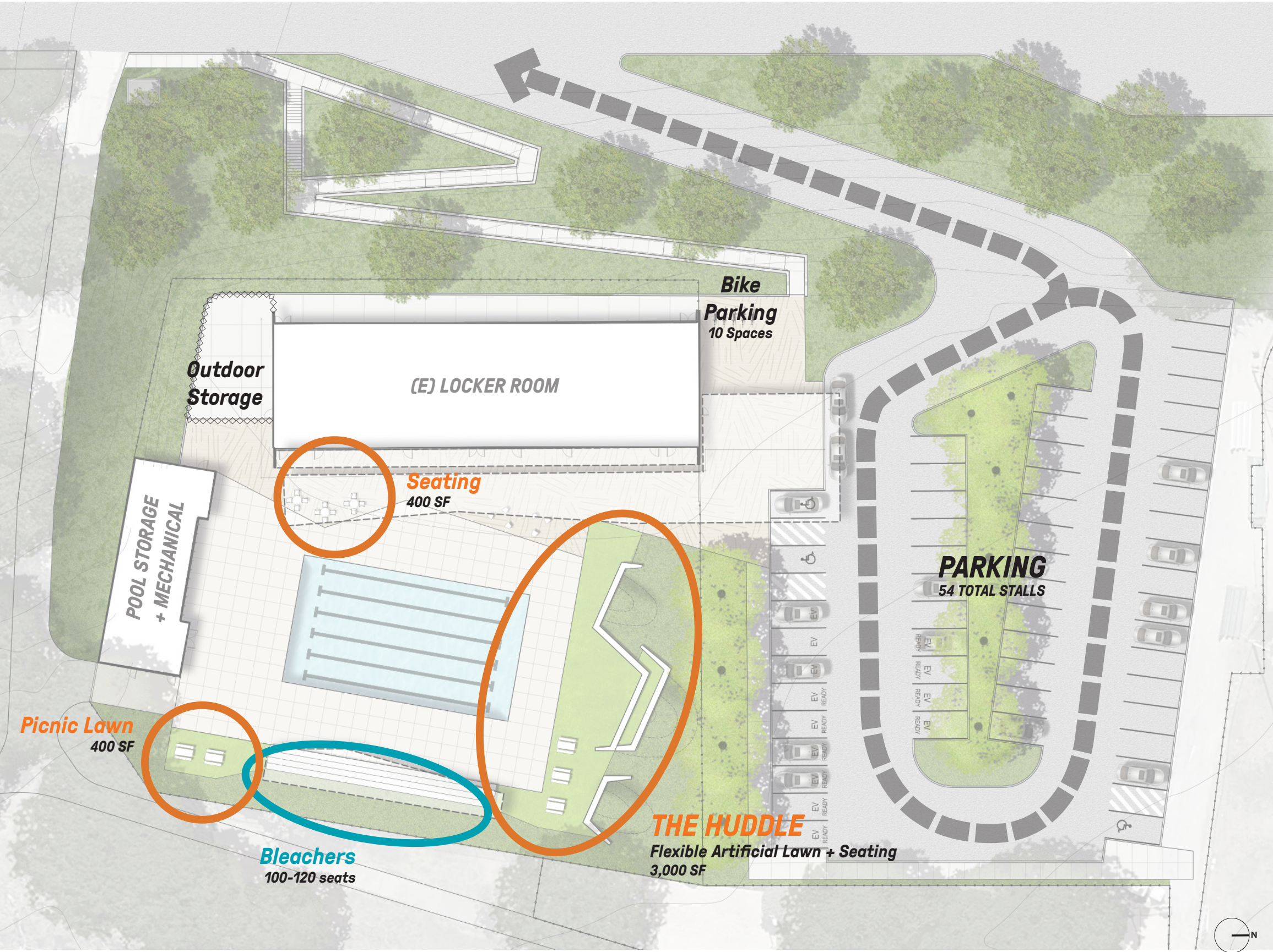
- ① Accessible Ramp
- ② Entry Stairs
- ③ Entry Plaza
- ④ Bike Parking
- ⑤ Huddle
Flexible Lawn + Seating
- ⑥ Picnic Area
- ⑦ Pool Deck Seating
- ⑧ Artificial Turf
- ⑨ Bleachers
- ⑩ Outdoor Storage
- ⑪ Perimeter Fence
- ⑫ Shade Canopy
- ⑬ Planting Area
- ⑭ Outdoor Showers (11)

Note:
Current parking has 69 stalls



Site Program

OPTION 1 - RENOVATION STUDY

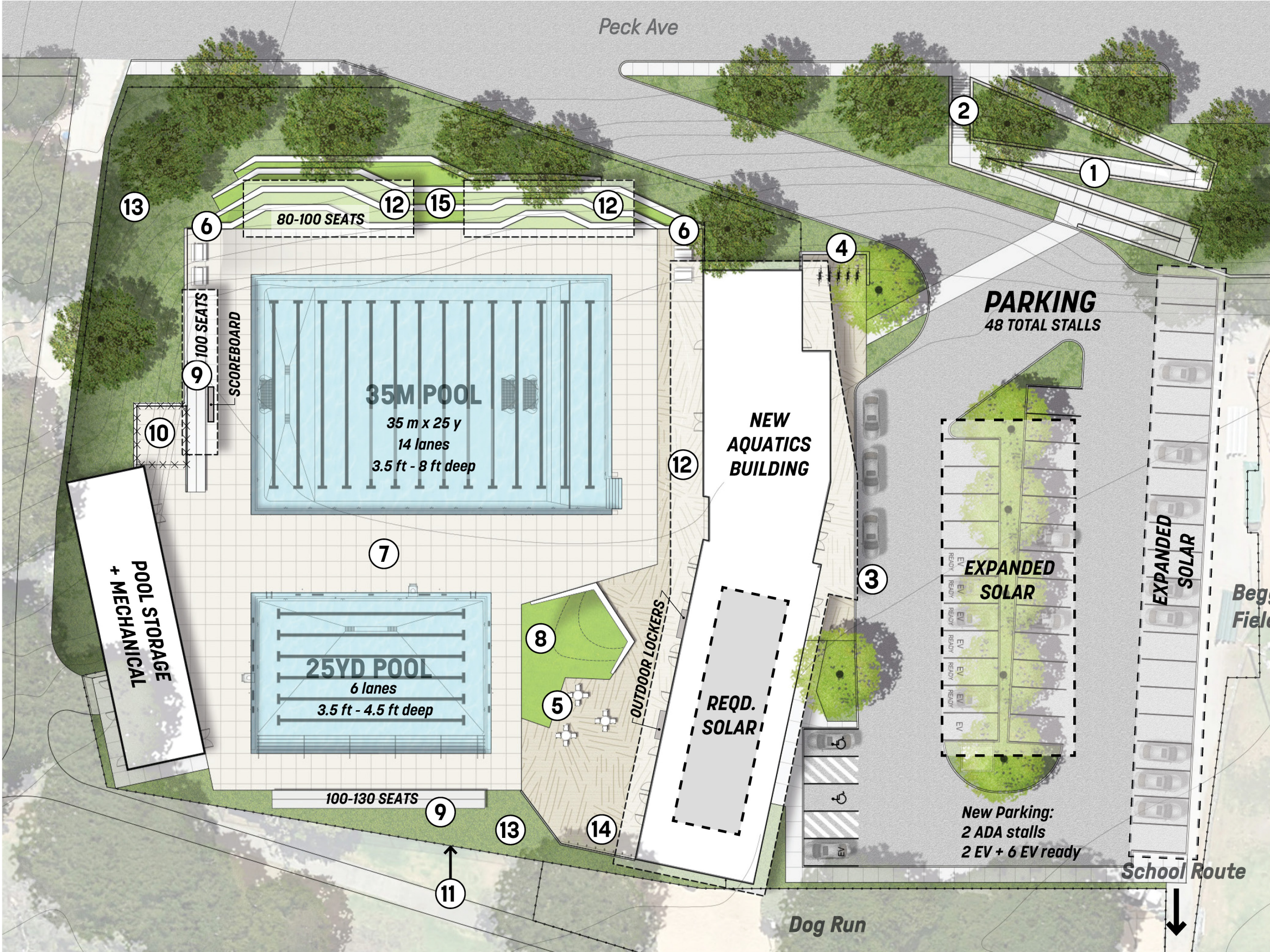


Total Parking	54
Accessible	3
Van Accessible	1
EV Capable Spaces	13
-EVSE	3



Site Program

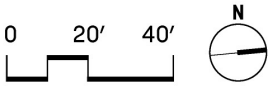
OPTION 2 - NEW FACILITY STUDY



LEGEND

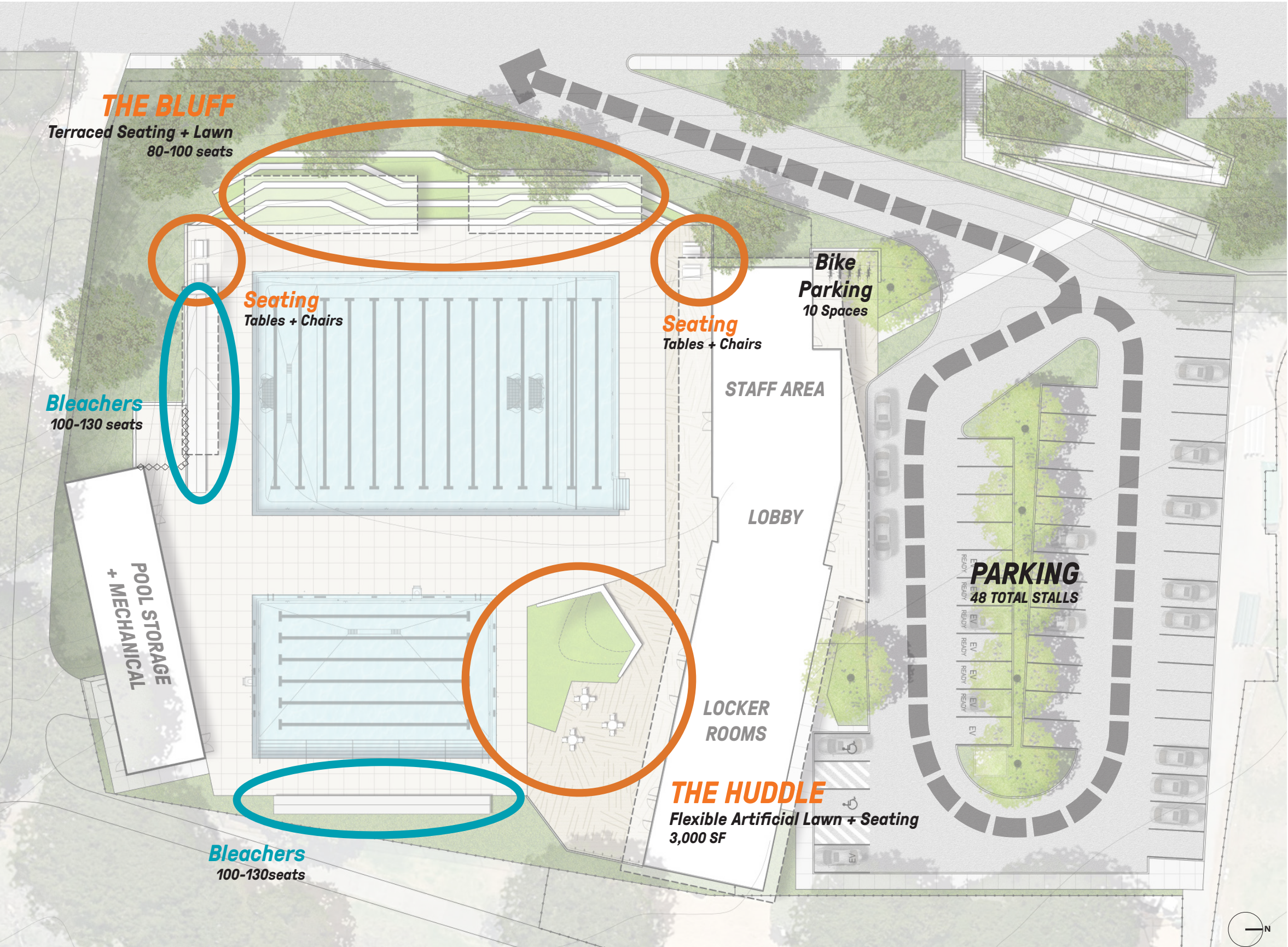
- 1 Accessible Ramp
- 2 Entry Stairs
- 3 Entry Drop Off
- 4 Bike Parking
- 5 The Huddle
Flexible Lawn + Seating
- 6 Seating Area
- 7 Pool Deck
- 8 Artificial Turf
- 9 Bleachers
- 10 Outdoor Storage
- 11 Perimeter Fence
- 12 Shade Canopy
- 13 Planting Area
- 14 Outdoor Showers (8)
- 15 The Bluff
Terraced Lawn + Seating

Note:
Current parking has 69 stalls



Site Program

OPTION 2 - NEW FACILITY STUDY



Total Parking	48
Accessible	2
Van Accessible	1
EV Capable Spaces	8
-EVSE	2



Civil Basis of Design (BOD)



HMC
Architects

Civil BOD

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

Grading

The project proposes a new aquatics center and ancillary parking lot. Currently, the project site includes an aquatics center with a small parking lot that is shared with the adjacent baseball field.

For Option 2, site grading will generate a building pad and provide ADA access and vehicular access through the project site, including fire lanes.

In both options, the pad grading for the proposed structure will be designed to work with the existing site conditions, while considering adherence to ADA and current stormwater requirements. The grading concept for the project site is to make it accessible throughout. The site currently is accessed by a narrow single-lane steep driveway. A wider two-lane driveway is proposed.

At-grade amenities are proposed along the north-west side of the building. Adjacent grades along the proposed new project will require coordination between design teams to effectively coordinate adjacent grades. The project is proposed to meet existing grades along Peck Road, the residential neighborhood, and park adjacent to the project.

The site includes new building(s) and new pool(s). The pool storage building is +/-25-feet below the westerly access road. The difference in elevation will be supported with small retaining walls, stairs, ramps, and bleachers.

Storm Drainage

Both options will require detailed hydrology, hydro-modification, and stormwater quality reports and design. Both options will also be designed to meet the current standards and regulations as required by the governing agency along with the small MS4 permit.

Stormwater will be collected through the site. A combination of pervious and impervious surfaces should be considered in an effort to reduce site run-off. Drainage shall be collected, treated, and detained per regulations. Bio-filtration basins and bioswales are being considered as a method to provided water quality treatment. Drainage from the site runs from west to east. Post development treatment BMP’s shall be designed to treat stormwater before it leaves the project site. Stormwater shall be collected throughout the development conveyed to designed bio-filtration detention basin(s) and then conveyed to the existing storm drain system. Geotechnical testing will be required to establish existing soil percolation and infiltration rates so that the appropriate BMP design measures can be implemented. Due to the native soil, infiltration options may be likely and utilized to reduce downstream run-off impacts and reduce the post development runoff to at least existing conditions. Collection systems shall be designed to mitigate stormwater based upon a 100-year rain event.

The project will increase the impervious areas, so we anticipate the need for an underground detention basin to mitigate the increase in runoff.

There is no public storm drain system adjacent to the site. In the existing conditions, the flows discharge directly to the park to the east. Site drainage will be collected by a series of smaller area drains and storm drain lines and will be conveyed to a Maxwell Drywell system in the northeast corner of the site. The sizing will be dependent upon final drainage calculations.

Site Utilities

The site is currently served by a 4” cast iron water service from Peck Avenue. Plumbing records show a 2.5-inch cold water service at the east side of the locker-room. An existing 14-inch water main runs north-south east of the facility within a 15-foot easement. Records also indicate that a six-inch reclaimed water is located within Peck Avenue to the west. Plumbing records show a four-inch waste line at the east side of the locker-room. Records indicate that an existing six-inch sewer serves the facility and connects to an 18-inch main line in Polliwog Park to the east within a 10-foot easement. Another sewer lateral is shown just north of the facility in the parking lot, also connecting to the 18-inch sewer main east within Polliwog Park. New service lines are proposed for water, irrigation (per landscape), fire, and sewer. Fire hydrant locations will need to be coordinated with fire department and per code. Water and sewer facilities shall be designed in accordance with the Water and Wastewater District design guidelines and specifications.

Dust and Erosion Control

Currently there are no Dust and Erosion control measures on the project site. The proposed project will implement strategies to control dry weather dust and erosion. This can be accomplished with various paving and surface treatments. A Storm Water Pollution Prevention Plan (SWPPP) will be developed as a part of the project. The SWPPP should address wet and dry weather mitigation measures, including monitoring of stormwater run-off for pollutants of concern during construction activities. It will also address permanent post construction BMP’s.

Pavement

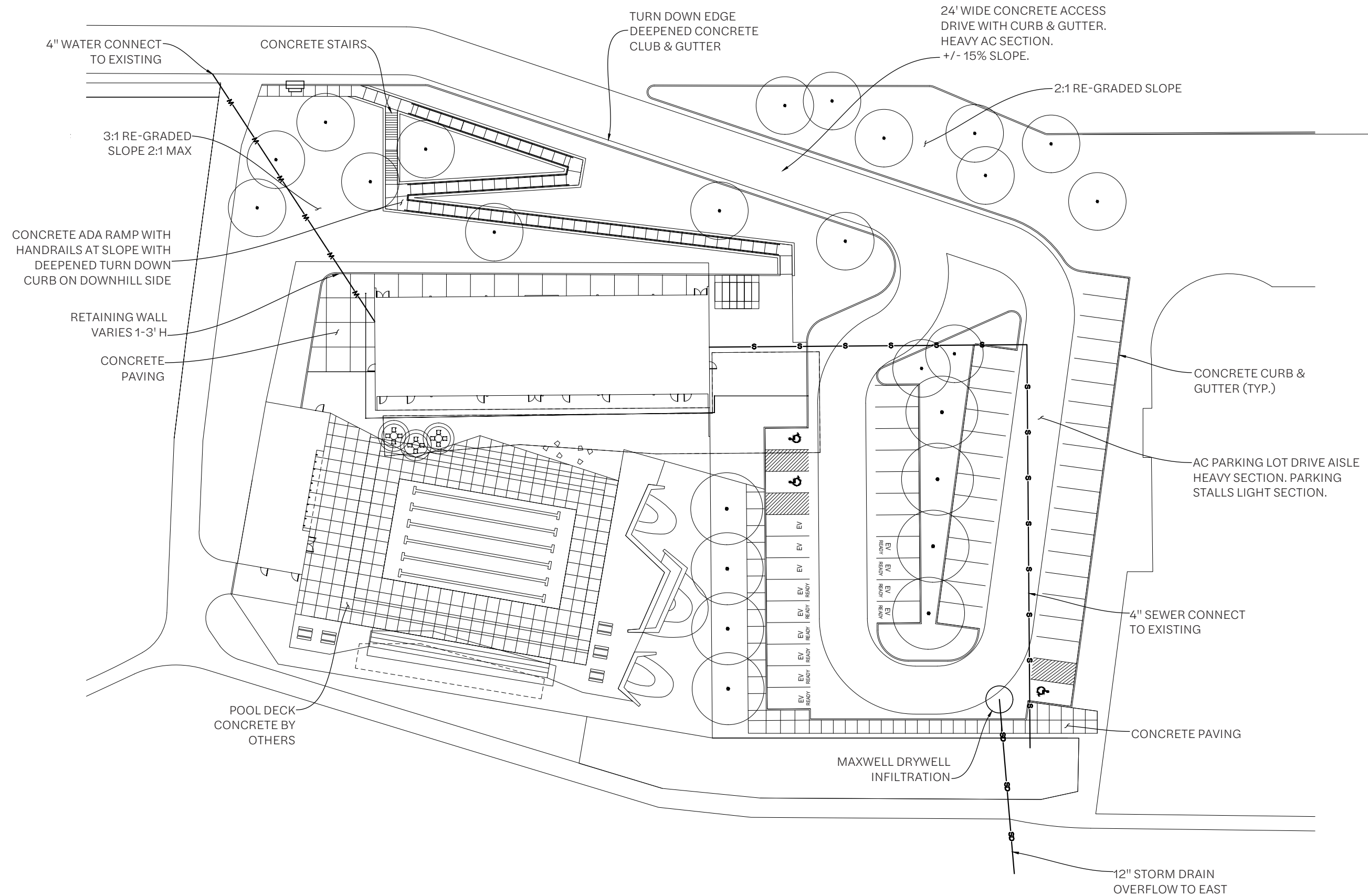
Where possible, pervious pavement options may be considered to reduce the stormwater run-off. Standard concrete or AC pavement will be utilized in parking drive areas and concrete and/or pavers may be considered for walkways. Concrete should be used for trash enclosures and delivery areas to accommodate heavy truck loads.

Fire lanes will traverse through parking lot and driveway. Pavement for fire lanes can match the adjacent materials (asphalt or concrete) but the structural section shall be increased to withstand the weight of the emergency vehicles per fire department requirements.

Landscape and permeable pavement areas around the building and parking lots should be incorporated to reduce stormwater runoff and to meet stormwater quality standards and requirements.

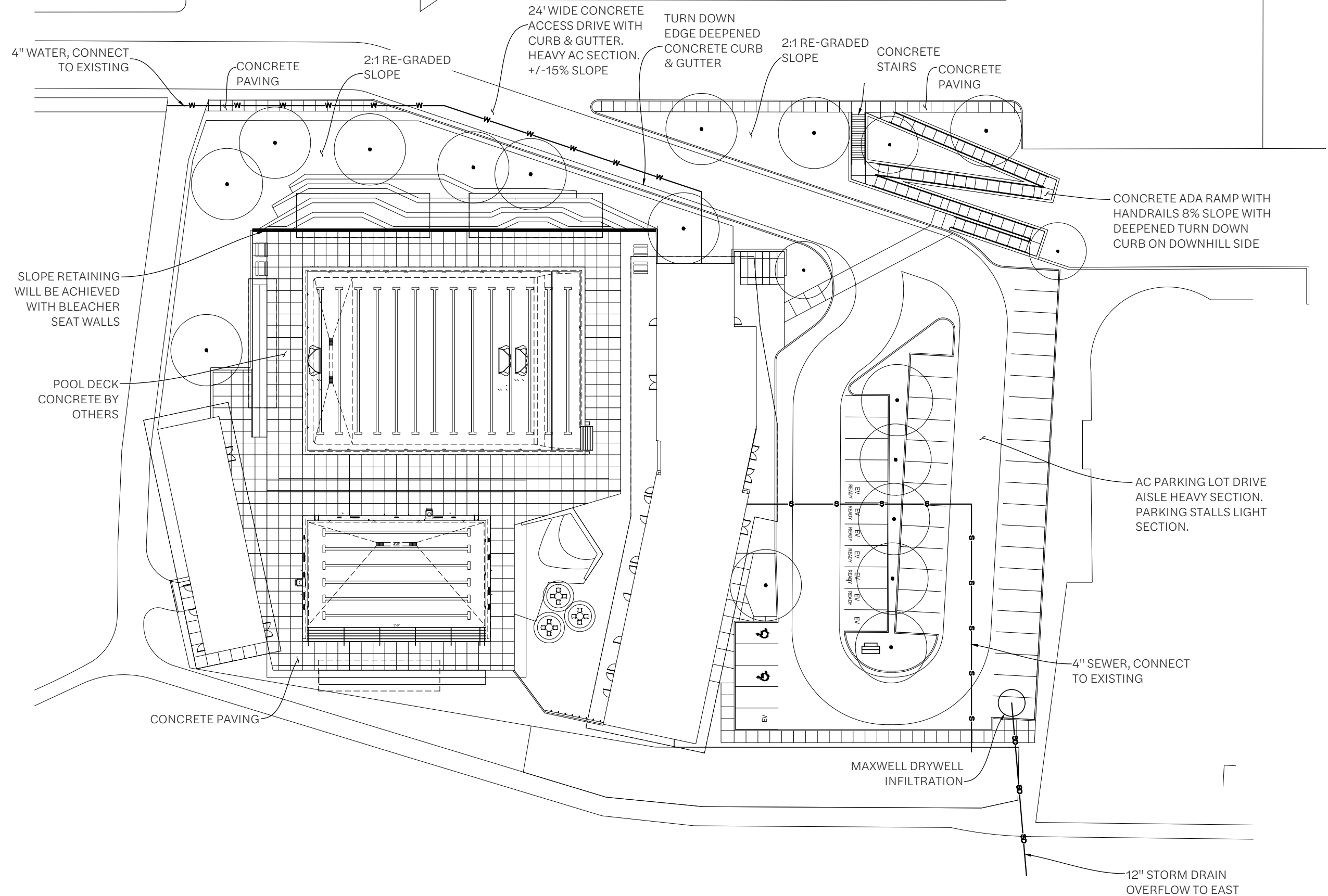
OPTION 1 - RENOVATION STUDY

OPTION 1 - RENOVATION STUDY



OPTION 2 - NEW FACILITY STUDY

OPTION 2 - NEW FACILITY STUDY



CONCRETE PAVING

2:1 RE-GRADED
SLOPE

24' WIDE CONCRETE
ACCESS DRIVE WITH
CURB & GUTTER.
HEAVY AC SECTION.
+/-15% SLOPE

TURN DOWN
EDGE DEEPENED
— CONCRETE CURB
& GUTTER

2:1 RE-GRADED
SLOPE

CONCRETE

CONCRETE
PAVING

— CONCRETE ADA RAMP WITH
HANDRAILS 8% SLOPE WITH
DEEPEMED TURN DOWN
CURB ON DOWNHILL SIDE

SLOPE RETAINING-
WILL BE ACHIEVED
WITH BLEACHER
SEAT WALLS

POOL DECK-
CONCRETE BY
OTHERS

— AC PARKING LOT DRIVE
AISLE HEAVY SECTION.
PARKING STALLS LIGHT
SECTION.

4" SEWER, CONNECT
TO EXISTING

MAXWELL DRYWELL
INFILTRATION-

—12" STORM DRAIN
OVERFLOW TO EAST



Mechanical Basis of Design (BOD)



HMC
Architects

Mechanical BOD

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

Mechanical Systems

The design of the heating, ventilating, and air-conditioning (HVAC) systems for the Begg Pool Facility will provide a system that meets the occupants’ needs and provides a safe environment for all spaces. The basis of design will address two strategies: Option 1, renovating the existing buildings, and Option 2, demolishing the existing buildings and providing new structures. From a mechanical standpoint, both scenarios will be extremely similar as the existing mechanical systems at the facility are inoperable and will need to be removed and replaced. Therefore, in both scenarios, new mechanical equipment will need to be provided.

In either scenario, the following HVAC strategy will be pursued: Utilize a dedicated outside air unit to provide the fresh air ventilation required for the locker rooms, shower rooms, restrooms, etc. The dedicated outside air unit will be equipped with heating only and will not require cooling capabilities. This is due to the temperate climate in Manhattan Beach and that the majority of spaces within the building (such as locker rooms and shower rooms) would not benefit from cooling.

In addition, fan coil units, both ducted and ductless, will provide cooling to spaces that could benefit from it as well as supplemental heating, if needed. The space types will be offices, breakrooms, training rooms, etc.

Roof-mounted exhaust fans will be utilized to remove the code-mandated quantities of air from certain spaces, such as the locker rooms, restrooms, and shower rooms.

Design Criteria

Code Standards and References

- California Building Standards Administrative Code (Title 24 Part 1), 2022
- California Building Code (Title 24 Part 2), 2022
- California Building Code (Title 24 Part 3), 2022
- California Mechanical Code (Title 24 Part 4), 2022
- California Plumbing Code (Title 24 Part 5), 2022
- California Energy Code (Title 24 Part 6), 2022
- California Fire Code (Title 24, Part 9), 2022
- California Green Building Code (Title 24, Part 11), 2022
- California Referenced Standards Code (Title 24, Part 12), 2022
- 2019 ASHRAE Handbook – HVAC Applications, Chapter 6
- 2019 ASHRAE 62.1, Ventilation for Acceptable Indoor Air Quality

Outside Design Conditions

The outdoor conditions for the building will follow the best available weather data. Typically, weather station data is utilized to determine the best source of historical data. The most suitable weather station for this area will be the Los Angeles Airport. Based on the ASHRAE data for this weather station, the following ambient conditions will be used:

Summer (Dry): 84.7°F DB / 63.3.5°F MCWB

Summer (Humid): 78.2°F MCDB / 70.5°F WB

Winter: 45°F DB

Mechanical BOD (CTD.)

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

HVAC PERFORMANCE CRITERIA

The HVAC systems will be designed to provide user comfort and enhanced indoor environmental quality while maximizing energy efficiency. The tables below lists the design criteria for each space for both option 1 and option 2.

Option 1 (Renovation) - Design Criteria by Space

Space	Cooling Temp	Heating Temp	Humidity	Pressurization
Women’s RR	N/A	68°F	N/A	Negative
Showers	N/A	68°F	N/A	Negative
Women’s Locker	N/A	68°F	N/A	Negative
Staff Office	74°F	68°F	30%-60%	Positive
Family Dress/RR	N/A	68°F	N/A	Negative
Lifeguard OBS/Break Room	74°F	68°F	30%-60%	Positive
Showers	N/A	68°F	N/A	Negative
Staff Dressing	74°F	68°F	30%-60%	Negative
Men’s RR	N/A	68°F	N/A	Negative
Men’s Locker	N/A	68°F	N/A	Negative
Staff Office	74°F	68°F	30%-60%	Positive
Family Dress/RR	N/A	68°F	N/A	Negative
Storage	74°F	68°F	30%-60%	Positive
Lobby/Check-In	74°F	68°F	30%-60%	Positive
Cust	N/A	N/A	N/A	Negative
Data	80°F	N/A	N/A	N/A

Option 2 (New Building) - Design Criteria by Space

Space	Cooling Temp	Heating Temp	Humidity	Pressurization
Women’s RR	N/A	68°F	N/A	Negative
Showers	N/A	68°F	N/A	Negative
Women’s Locker	N/A	68°F	N/A	Negative
Staff Office	74°F	68°F	30%-60%	Positive
Family Dress/RR	N/A	68°F	N/A	Negative
Lifeguard OBS/Break Room	74°F	68°F	30%-60%	Positive
Showers	N/A	68°F	N/A	Negative
Staff Dressing	74°F	68°F	30%-60%	Negative
Men’s RR	N/A	68°F	N/A	Negative
Men’s Locker	N/A	68°F	N/A	Negative
Staff Office	74°F	68°F	30%-60%	Positive
Family Dress/RR	N/A	68°F	N/A	Negative
Storage	74°F	68°F	30%-60%	Positive
Lobby/Check-In	74°F	68°F	30%-60%	Positive
Cust	N/A	N/A	N/A	Negative
Data	80°F	N/A	N/A	N/A

Mechanical BOD (CTD.)

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

In addition to the space specific design criteria listed in the previous page, the following section describes the general design criteria followed throughout the entirety of the HVAC design.

Indoor Air Quality

The design will meet the minimum outside air quantity and quality requirements of Title 24 as well as the exhaust rates described in Chapter 4 of the 2022 California Mechanical Code.

In addition, filtration will be provided on all outside air intake sources in line with Title 24. For both options, the minimum filtration rating of MERV 13 will satisfy current code requirements.

Room Noise Criteria

Generally, the design Noise Criteria (NC) levels will be selected based on manufacturer’s Sound Power Level data, and sound attenuating devices, including plenum lining and flexible ductwork, will be pursued. The background NC is a measurable goal of the noise that should not be exceeded by the HVAC system in various areas. Equipment will be selected for minimum reasonable noise levels consistent with operating parameters of a specific space type. The use of sound control devices that generate pressure drop will be avoided when possible. Round ductwork will be used where possible to avoid duct “oil-canning.”

Ventilation

Ventilation will be in line with the code-mandated quantities described in Chapter 4 of the 2022 California Mechanical Code. This chapter of the code prescribes minimum exhaust rates based on the square footage of certain types as well as an exhaust quantity required per plumbing fixture. The adjacent table shows the specific exhaust criteria for each space type.

Option 1 (Renovation) & Option 2 (New Building) - Exhaust Rate Per Space Type

Space Type	Exhaust Rate (CFM/Fixture)	Exhaust Rate (CFM/SF)	Air Class
Restrooms	70	N/A	2
Locker Rooms	N/A	0.5	2
Shower Rooms	70	N/A	2
Custodial	N/A	0.5	3

Mechanical BOD (CTD.)

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

HVAC SYSTEM

As mentioned previously, both the remodel option as well as the new building option will follow a very similar path for mechanical systems. In both cases, roof-mounted exhaust fans will remove the code-required amount of exhaust for each space. A dedicated outside air unit will be responsible for providing make-up air to these spaces and also serve as a centralized point of filtration for occupant fresh air. The dedicated outside air unit will be capable of heating only because of the mild weather in Manhattan Beach, and the space types it serves, such as showers, restrooms, etc. do not typically benefit from cooling. In addition, certain spaces will utilize fan coils with roof-top mounted condensing units to provide cooling to room types that could benefit from it. Lastly, the data room will be served by a dedicated high wall split system that will provide cooling year round when necessary.

REMODEL OPTION - MECHANICAL EQUIPMENT

Dedicated Outdoor air unit - Greenheck RV-25

The dedicated outside air unit will provide fresh air ventilation and make-up air to the heavily exhausted areas of the building. The dedicated outside air unit will have the following feature:

- 3,750 CFM of Fresh Outside Air
- MERV-13 Filtration
- 200 MBH of Heating Capacity
- Mounted in Mechanical Room

Exhaust Fans - Greenheck G-xx-VG

Various spaces throughout the facility will utilize roof-mounted exhaust fans. These fans will operate to a definable building occupied schedule and interlock function with the dedicated outside air unit. The exhaust fans will have the following features:

- Roof-mounted
- Down Blast
- Variable Speed Fan for Balancing and Fine Tuning
- Aluminum Housing
- Direct Drive Fans

Fan Coil Units/Heat Pumps - Carrier 40MAQ/8MAR

Certain spaces will benefit from cooling, such as breakrooms and the check-in area. For these spaces, fan coil units mounted above the ceiling space will provide cooling and heating for these areas. In addition, they will be responsible for filtering and conditioning the fresh air ventilation for occupants. The outdoor heat pump units will be roof-mounted in locations that minimize refrigerant piping runs and provide maintenance staff easy access and ample room for repairs.

The fan coils and heat pumps will have the following features:

- Fan Coils Mounted in Ceiling Space
- Outdoor Heat Pumps Mounted on The Roof
- Standalone Space Temperature Control

Data Room Fan Coil/Heat Pump

The data room will have a dedicated high wall fan coil unit capable of providing cooling year-round. The heating function will be disabled for this unit. The outdoor heat pump unit will be installed on the roof such that refrigerant run length is minimized. The data room fan coil/heat pump will have the following features:

- Year-round Temperature Control
- Disabled Heating

NEW BUILDING OPTION - MECHANICAL EQUIPMENT

Dedicated Outdoor air unit - Greenheck RV-25

The dedicated outside air unit will provide fresh air ventilation and make-up air to the heavily exhausted areas of the building. The dedicated outside air unit will have the following feature:

- 5,000 CFM of Fresh Outside Air
- Merv-13 Filtration
- 300 MBH of Heating Capacity
- Mounted in Mechanical Room

Exhaust Fans - Greenheck G-xx-VG

Various spaces throughout the facility will utilize roof-mounted exhaust fans. These fans will operate to a definable building occupied schedule and interlock function with the dedicated outside air unit. The exhaust fans will have the following features:

- Roof-mounted
- Down blast
- Variable Speed Fan for Balancing and Fine Tuning
- Aluminum Housing
- Direct Drive Fans

Fan Coil Units/Heat Pumps - Carrier 40MAQ/8MAR

Certain spaces will benefit from cooling, such as breakrooms and the check-in area. For these spaces, fan coil units mounted above the ceiling space will provide cooling and heating. In addition, they will be responsible for filtering and conditioning the fresh air ventilation for occupants. The outdoor heat pump units will be roof-mounted in locations that minimize refrigerant piping runs and provide maintenance staff easy access and ample room for repairs. The fan coils and heat pumps will have the following features:

- Fan Coils Mounted in Ceiling Space
- Outdoor Heat Pumps Mounted on The Roof.
- Standalone Space Temperature Control

Data Room Fan Coil/Heat Pump

The data room will be provided with a dedicated high wall fan coil unit that is capable of providing year-round cooling. The heating function will be disabled for this unit. The outdoor heat pump unit will be installed on the roof such that refrigerant run length is minimized. The data room fan coil/heat pump will have the following features:

- Year-round Temperature Control
- Disabled Heating

MECHANICAL MATERIALS CRITERIA - BOTH OPTIONS

Ductwork Materials

A traditional supply/exhaust air duct system will be used for all spaces. The duct work will be constructed out of galvanized steel and have a minimum pressure class of 2-inch.

Sealing, reinforcing, and supporting shall be in accordance with SMACNA standards. All interior ductwork, except exhaust ducts, shall have R-4.5 (1-1/2” thick) foil faced thermal insulation to minimize heat transfer and prevent condensation. Exposed supply air ducts located outdoors, in mechanical rooms, or in duct shafts shall be R-8 (3” thick) insulated sheet metal. Exposed ductwork located outdoors shall be double wall construction with the R-8 insulation between inner and outer duct walls.

Round ducts shall be used to the maximum extent possible. Rectangular ducts will be limited to areas of space restriction with a maximum aspect ratio of 4:1.

The supply air ducts from RTU discharge up to diffusers shall be sized for friction losses between 0.08 inches WG/100 feet but not to exceed a velocity of 1,500 fpm.

General building exhaust duct systems will be galvanized steel of minimum 2-inch water gauge pressure class. There will be no insulation provided for exhaust ductwork.

Grilles, Registers, and Diffusers

In all spaces a 2’x2’ plaque face or modular core diffuser shall be used. Diffuser shall not include volume dampers; rather all volume dampers shall be located as close to the branch duct takeoff as possible to minimize noise transmission. Exhaust grilles shall have a perforated face.

Controls

Fan Coil Heat Pump Units

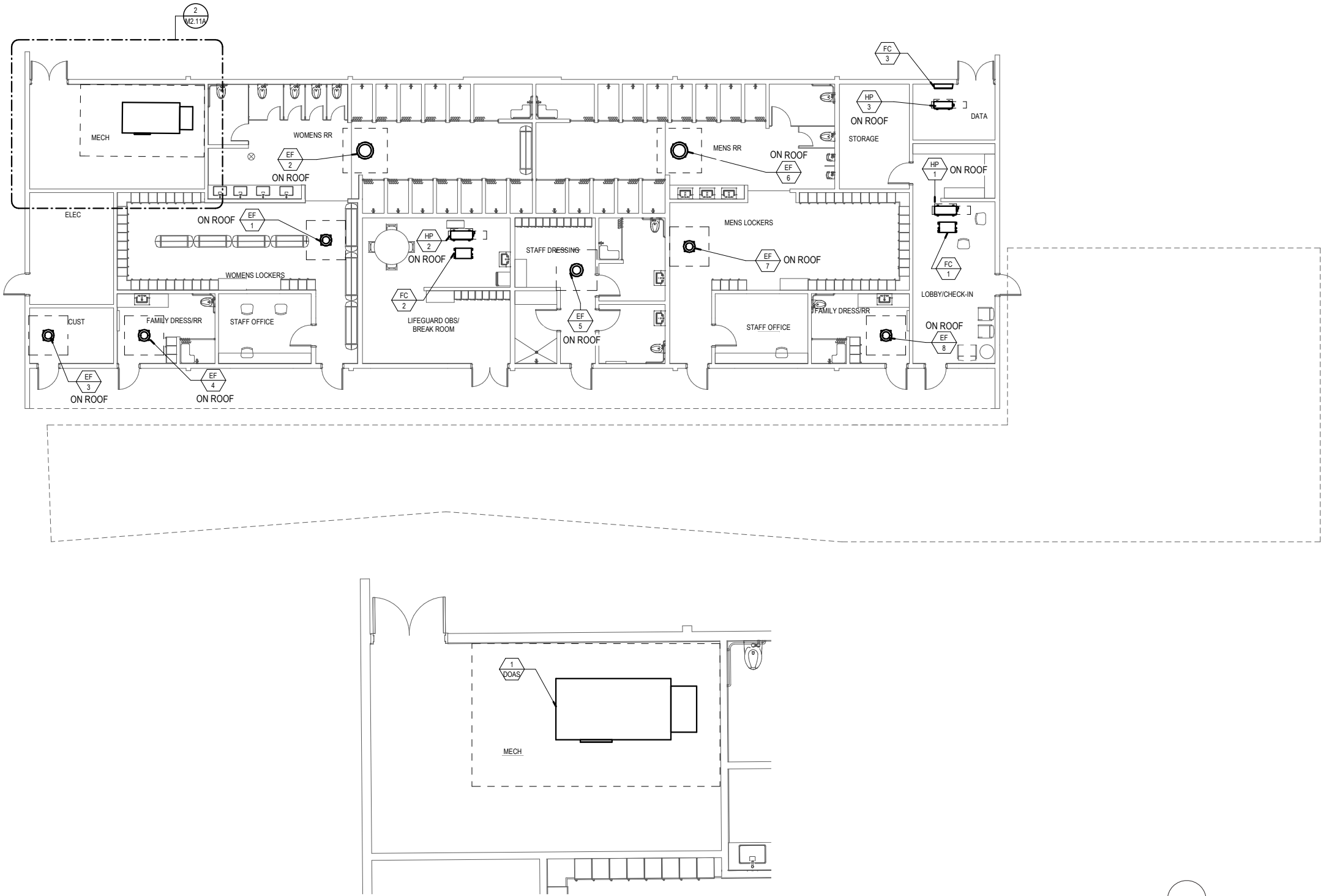
For all spaces, the HVAC control system will consist of wall-mounted thermostats and CO2 sensors (in densely occupied areas). These sensors will provide their data to unit-mounted controllers within the fan coil/heat pump units. These controllers will stage on heating and cooling to maintain temperature and pressure set-points.

Dedicated Outside Air Unit and Exhaust Fans

The dedicated outside air unit and exhaust fans will be set to operate through use of a time-clock that is set to the building occupied schedule. This will allow for the proper ventilation to be provided during all hours of occupancy.

Mechanical Plans

























OPTION 1 - RENOVATION STUDY



2 / M2.11A

Mechanical Schedules

OPTION 1 - RENOVATION STUDY

EXHAUST FAN SCHEDULE													
TAG	MANUFACTURER & MODEL NO.	AREA SERVED	FAN SYSTEM				SONES	ELECTRICAL		OPR. WT WITH ACCESSORIES (LBS.)	REMARKS (SEE EQUIPMENT NOTES BELOW)	ANCHORAGE DETAIL REFERENCE	EXHAUST FAN INTERLOCKED
			CFM	ESP	RPM	HP		V-PH-HZ	AMPS				
	GREENHECK G-70-VG	WOMEN'S LOCKERS	270	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
	GREENHECK G-140-VG	WOMEN'S RESTROOM/SHOWERS	1,650	.5	-	-	-	120V-1Ø-60Hz	8.2	55	①		
	GREENHECK G-60-VG	CUST	100	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
	GREENHECK G-70-VG	FAMILY DRESS/RR	225	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
	GREENHECK G-95-VG	STAFF DRESSING	450	.5	-	-	-	120V-1Ø-60Hz	3.5	30	①		
	GREENHECK G-140-VG	MEN'S RESTROOM/SHOWERS	1,500	.5	-	-	-	120V-1Ø-60Hz	8.2	55	①		
	GREENHECK G-70-VG	MEN'S LOCKERS	275	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
	GREENHECK G-70-VG	FAMILY DRESS/RR	225	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
EQUIPMENT NOTES: ① --													

Mechanical Schedules (CTD.)

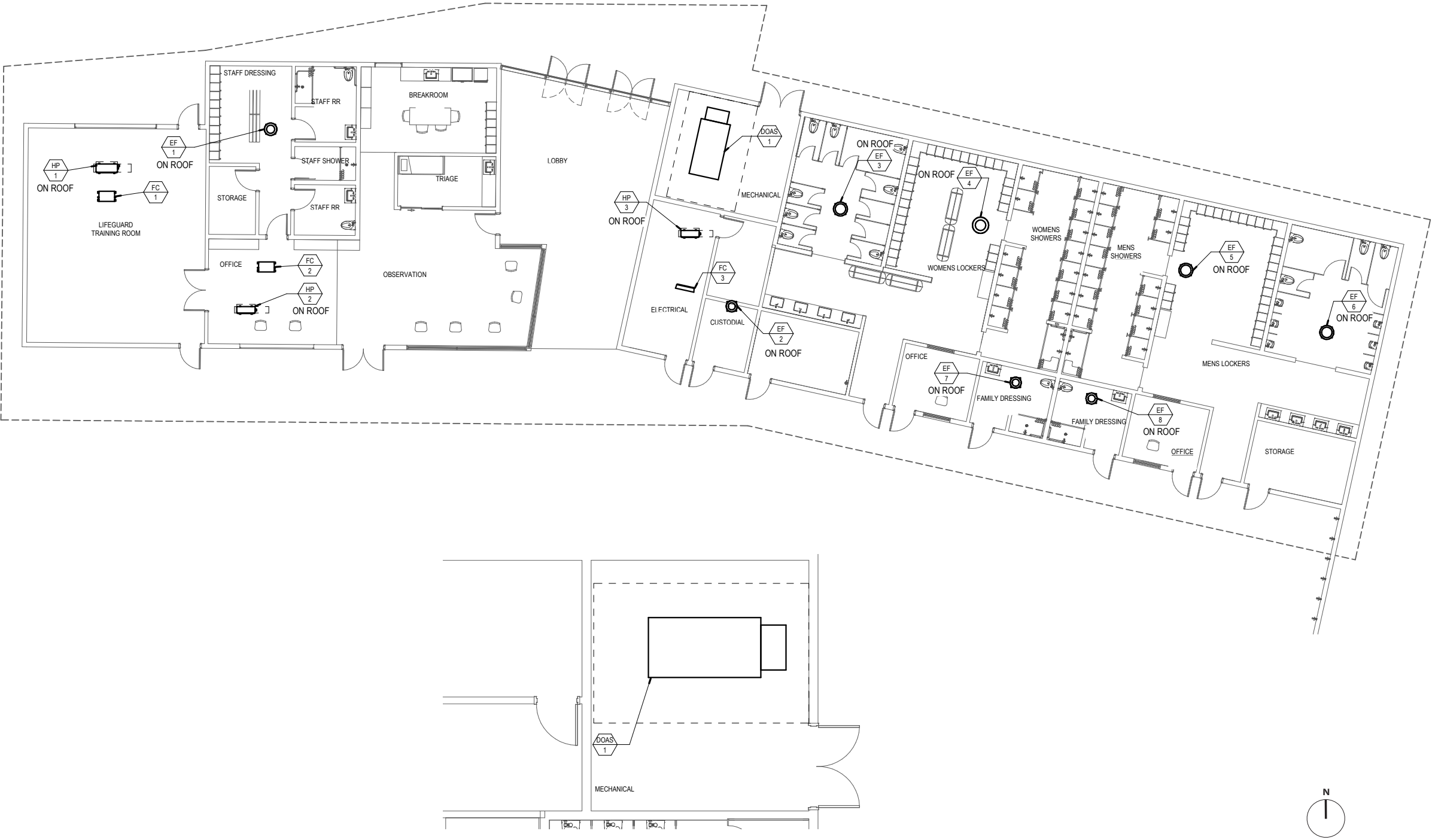
OPTION 1 - RENOVATION STUDY

DEDICATED OUTSIDE AIR UNIT SCHEDULE														
TAG	MFR. & MODEL NO.	FILTER	FAN SYSTEM				ELECTRICAL		FURNACE HEATING			OPER. WEIGHT (LBS.)	REMARKS (SEE EQUIPMENT NOTES BELOW)	ANCHORAGE DETAIL REFERENCE
			CFM	ESP	RPM	HP	V-PH-HZ	AMPS	INPUT BTU/HR	OUTPUT BTU/HR	EFFICIENCY			
<div>DOAS</div> <div>1</div>	GREENHECK RV-25	MERV-13	3,750	1	-	-	208V-3Ø-60Hz	6	200,000	162,000	-	1,500	①	<div>1</div> <div>M-</div>
EQUIPMENT NOTES: ① -														

FAN COIL SCHEDULE														
TAG	MANUFACTURER & MODEL NO.	AREA SERVED	CFM	E.S.P.	RPM	REFRIG. TYPE	ELECTRICAL			MIN OSA	OPER. WT. (LBS)	ANCHORAGE DETAIL REFERENCE	SMOKE DUCT DETECTOR	REMARKS
							MCA	MOCP	V-PH-Hz					
<div>FC</div> <div>1</div>	CARRIER 40MBDQ24	LOBBY/CHECK-IN	800	.5	-	R-410A	-	-	208-1-60	-	90	<div>1</div> <div>M-</div>	-	①
<div>FC</div> <div>2</div>	CARRIER 40MBDQ24	LIFEGUARD OBS/BREAK ROOM	800	.5	-	R-410A	-	-	208-1-60	-	90	<div>1</div> <div>M-</div>	-	①
<div>FC</div> <div>3</div>	CARRIER 40MAQB12	DATA ROOM	400	-	-	R-410A	-	-	208-1-60	-	30	<div>1</div> <div>M-</div>	-	①
EQUIPMENT NOTES: ① -														
HEAT PUMP SCHEDULE														
TAG	MANUFACTURER & MODEL NO.	DESIGN COOLING CONDITION				HEATING CAPACITY			ELECTRICAL			OPER. WT. (LBS)	ANCHORAGE DETAIL REFERENCE	REMARKS (SEE EQUIPMENT NOTES BELOW)
		AMBIENT DB/WB °F	TOTAL (MBH)	SENSIBLE (MBH)	EFF.	AMBIENT TEMP °F	OUTPUT (MBH)	EFF.	MCA	MOCP	V-PH-Hz			
<div>HP</div> <div>1</div>	CARRIER 38MARBQ24	85 / 63	24,000	-	- SEER - EER	45.0	24,000	- COP	-	-	208-1-60	135	<div>1</div> <div>M-</div>	①
<div>HP</div> <div>2</div>	CARRIER 38MARBQ24	85 / 63	24,000	-	- SEER - EER	45.0	24,000	- COP	-	-	208-1-60	135	<div>1</div> <div>M-</div>	①
<div>HP</div> <div>3</div>	CARRIER 38MARBQ12	85 / 63	12,000	-	- SEER - EER	45.0	12,000	- COP	-	-	208-1-60	75	<div>1</div> <div>M-</div>	①
EQUIPMENT NOTES: ① -														

























Mechanical Plans

OPTION 2 - NEW FACILITY STUDY



Mechanical Schedules

OPTION 2 - NEW FACILITY STUDY

EXHAUST FAN SCHEDULE													
TAG	MANUFACTURER & MODEL NO.	AREA SERVED	FAN SYSTEM				SONES	ELECTRICAL		OPR. WT WITH ACCESSORIES (LBS.)	REMARKS (SEE EQUIPMENT NOTES BELOW)	ANCHORAGE DETAIL REFERENCE	EXHAUST FAN INTERLOCKED
			CFM	ESP	RPM	HP		V-PH-HZ	AMPS				
	GREENHECK G-90-VG	STAFF DRESSING	450	.5	-	-	-	120V-1Ø-60Hz	1.9	30	①		
	GREENHECK G-60-VG	CUSTODIAL	100	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
	GREENHECK G-120-VG	WOMEN'S RESTROOM	1,050	.5	-	-	-	120V-1Ø-60Hz	4.8	45	①		
	GREENHECK G-130-VG	WOMEN'S LOCKER/SHOWERS	1,315	.5	-	-	-	120V-1Ø-60Hz	8.2	50	①		
	GREENHECK G-120-VG	MEN'S LOCKER/SHOWERS	895	.5	-	-	-	120V-1Ø-60Hz	4.8	45	①		
	GREENHECK G-120-VG	MEN'S RESTROOM	1,050	.5	-	-	-	120V-1Ø-60Hz	4.8	45	①		
	GREENHECK G-70-VG	FAMILY DRESSING	225	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
	GREENHECK G-70-VG	FAMILY DRESSING	225	.5	-	-	-	120V-1Ø-60Hz	1.6	20	①		
EQUIPMENT NOTES: ① --													

Mechanical Schedules (CTD.)

OPTION 2 - NEW FACILITY STUDY

FAN COIL SCHEDULE														
TAG	MANUFACTURER & MODEL NO.	AREA SERVED	CFM	E.S.P.	RPM	REFRIG. TYPE	ELECTRICAL			MIN OSA	OPER. WT. (LBS)	ANCHORAGE DETAIL REFERENCE	SMOKE DUCT DETECTOR	REMARKS
							MCA	MOCP	V-PH-Hz					
<div>FC1</div>	CARRIER 40MBDQ24	LIFE GUARD TRAINING	800	.5	-	R-410A	-	-	208-1-60	-	90	<div>1M-</div>	-	①
<div>FC2</div>	CARRIER 40MBDQ36	-OFFICE, OBSERVATION TRIAGE, BREAKROOM	1,200	.5	-	R-410A	-	-	208-1-60	-	150	<div>1M-</div>	-	①
<div>FC3</div>	CARRIER 40MAQB12	DATA ROOM	400	-	-	R-410A	-	-	208-1-60	-	30	<div>1M-</div>	-	①
EQUIPMENT NOTES: ① -														
HEAT PUMP SCHEDULE														
TAG	MANUFACTURER & MODEL NO.	DESIGN COOLING CONDITION				HEATING CAPACITY			ELECTRICAL			OPER. WT. (LBS)	ANCHORAGE DETAIL REFERENCE	REMARKS (SEE EQUIPMENT NOTES BELOW)
		AMBIENT DB/WB °F	TOTAL (MBH)	SENSIBLE (MBH)	EFF.	AMBIENT TEMP °F	OUTPUT (MBH)	EFF.	MCA	MOCP	V-PH-Hz			
<div>HP1</div>	CARRIER 38MARBQ24	<div>8563</div>	24,000	-	- SEER - EER	45.0	24,000	- COP	-	-	208-1-60	135	<div>1M-</div>	①
<div>HP2</div>	CARRIER 38MARBQ36	<div>8563</div>	36,000	-	- SEER - EER	45.0	48,000	- COP	-	-	208-1-60	175	<div>1M-</div>	①
<div>HP3</div>	CARRIER 38MARBQ12	<div>8563</div>	12,000	-	- SEER - EER	45.0	12,000	- COP	-	-	208-1-60	75	<div>1M-</div>	①
EQUIPMENT NOTES: ① -														

DEDICATED OUTSIDE AIR UNIT SCHEDULE														
TAG	MFR. & MODEL NO.	FILTER	FAN SYSTEM				ELECTRICAL		FURNACE HEATING			OPER. WEIGHT (LBS.)	REMARKS (SEE EQUIPMENT NOTES BELOW)	ANCHORAGE DETAIL REFERENCE
			CFM	ESP	RPM	HP	V-PH-HZ	AMPS	INPUT BTU/HR	OUTPUT BTU/HR	EFFICIENCY			
<div>DOAS1</div>	GREENHECK RV-25	MERV 13	5,000	1	-	-	208V-3Ø-60Hz	19	300,000	243,000	-	1,615	①	<div>1M-</div>
EQUIPMENT NOTES: ① -														

Plumbing Basis of Design (BOD)



HMC
Architects

Plumbing BOD

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

PLUMBING SYSTEMS - BOTH OPTIONS

Our design will of provide a plumbing system that complies with the occupant needs and provides an efficient and safe environment. The scope of plumbing includes plumbing fixtures, domestic water distribution, sanitary sewer, vent, storm drainage, natural gas system, and providing plumbing utility points of connection to the pool equipment.

The basis of design will address two strategies, namely, renovating the existing buildings (Option 1) or demolishing the existing buildings and providing new structures (Option 2). From a plumbing perspective, the two strategies will be very similar, with only the quantity of plumbing fixtures and locations of plumbing mains differing between the two.

Applicable Codes

The plumbing systems will be designed in accordance with listed applicable codes, standards and Authorities Having Jurisdiction, the Owner’s insurance underwriters, and current engineering practices.

- California Building Standards Administrative Code (Title 24, Part 1), 2022
- California Building Code (Title 24, Part 2), 2022
- California Mechanical Code (Title 24, Part 4), 2022
- California Plumbing Code (Title 24, Part 5), 2022
- California Energy Code (Title 24, Part 6), 2022 California Fire Code (Title 24, Part 9), 2022
- California Referenced Standards Code (Title 24, Part 12), 2022

Reference Standards and Guidelines

- ANSI American National Standards Institute
- UL Underwriters Laboratories
- AGA American Gas Association
- ASME American Society of Mechanical Engineers
- ASSE American Society of Sanitary Engineers
- ASTM American Society for Testing and Materials
- AWWA American Water Works Association
- CISPI Cast Iron Soil Pipe Institute
- NSF National Sanitation Foundation
- PDI Plumbing and Drainage Institute

Domestic Cold Water

The domestic cold-water system shall be sized based on a maximum velocity of eight feet per second and a maximum allowable pressure loss of three psi per 100 feet. A minimum of 35 psi to the last and most remote plumbing fixtures and/or equipment will be provided.

The building domestic cold-water system shall be sized based on Chapter 6, Table 610.3 & 610.4 of the California Plumbing Code.

Main domestic cold-water entry into the building will be coordinated with the Civil Engineer’s site piping. A water meter shall be located near the main cold-water entry into the building and shall be coordinated with the Civil Engineer.

Domestic water will be distributed to plumbing fixtures, hose bibs, water heaters, and pool equipment via city street main water pressure. A pressure reducing valve will be provided if necessary.

Shut-off valves shall be provided in a central location where possible and behind access panels where necessary. Groups of fixtures will be provided with isolation valves for ease of maintenance. Each plumbing fixture will also be provided with individual isolation valves (fixture stops) for maintenance purposes.

Water hammer arrestors shall be provided behind access panels at locations in compliance with the code.

Hose bibs shall be provided at building perimeter at 75 ft. spacing and on roof for equipment service. Additional hose bibs at roof for future PV panel wash down will be provided (if any).

Domestic Hot Water

Domestic hot water will be generated using new commercial-grade, gas-fired water heater with storage.

The hot water heater and associated components will be located in the mechanical room. Hot water shall be routed to all domestic plumbing fixtures.

A hot water re-circulation system will also be provided and re-circulated by a closed loop domestic in-line pump with a motor capacity of approximately 1/6 horsepower.

A seven (7) day twenty-four (24) hour programmable time clock, aqua stat and temperature sensors will maintain the hot water loop temperature within 105°F to 120°F range.

All hot water distribution piping will be insulated with appropriate thickness of insulation and fire-retardant jacket. The domestic hot water system shall be sized based on a maximum velocity of five feet per second.

Sanitary Sewer and Vent System

The building sanitary drainage and vent system shall be sized based on Chapter 7, Table 702.1 and 703.2 of the California Plumbing Code.

Sanitary sewer piping shall connect to the existing sewer infrastructure in the street. Point of connection will be coordinated with Civil Engineer.

Sanitary sewer will serve the restrooms, janitorial room, floor drains/sinks, and pool equipment where necessary.

Sanitary vent piping shall be routed above ceiling and terminate at an approved location through the roof. Vent terminations through roof will be coordinated so as to avoid any interference with PV panels (if any) and/or HVAC equipment outside air intakes.

Clean-outs shall be provided at lavatories, water closets, and sinks where they are the final fixture in a run and above all urinals. Floor drains with trap primers shall be provided in restrooms containing two (2) or more water closets or a combination of one (1) water closet and one (1) urinal, shower/ lockers rooms, pool storage room and mechanical rooms.

Hub drains for the fire sprinkler system main drain inside the fire riser room will be provided and connected to the sanitary system as applicable.

Indirect Waste and Condensate Drainage Systems

HVAC condensate drainage piping will be provided to each fan coil unit. Such piping will drain to an indirect waste connection to the sanitary sewer/waste system via approved receptor, tailpiece connection at the nearest lavatory or sink, or a fixed air gap mounted within a stainless-steel panel in wall.

Storm Drain System

The building storm drainage system shall be sized based on Chapter 11, Table 1101.7 and 1101.11 of the California Plumbing Code. Sizes shall be based on 3”/hour rainfall intensity.

A complete gravity storm drainage system connecting to each roof drain and overflow drain shall be provided.

Roof drains will be collected and connected to separate risers and underground on-site storm drainage system per coordination with Civil Engineer. The Civil Engineer will collect the roof drainage system from the building to central collection points including any perimeter exterior drains.

Primary drainage will be connected to the main storm drainage system while the secondary drains will daylight and terminate through face of outside wall at 12” to 18” above finished grade. Wall flanges shall be provided at overflow terminations.

Natural Gas System

A new gas supply connection will be provided for the building comprising of a gas meter, pressure regulator, shut-off valve, and seismic valve.

Gas supply into the building will be low pressure. It will then distribute at low pressure to all gas-fired appliances and equipment such as domestic water heaters and mechanical units.

Plumbing Fixtures

The plumbing fixtures shall be commercial-grade, code- and energy-compliant fixtures meeting CalGreen requirements.

Fixture maximum flow rates are as follows:

- Water closets: 1.28 GPF.
- Urinals: 0.125 GPF
- Lavatory faucets: 0.5 GPM.
- Showers: 1.8 GPM

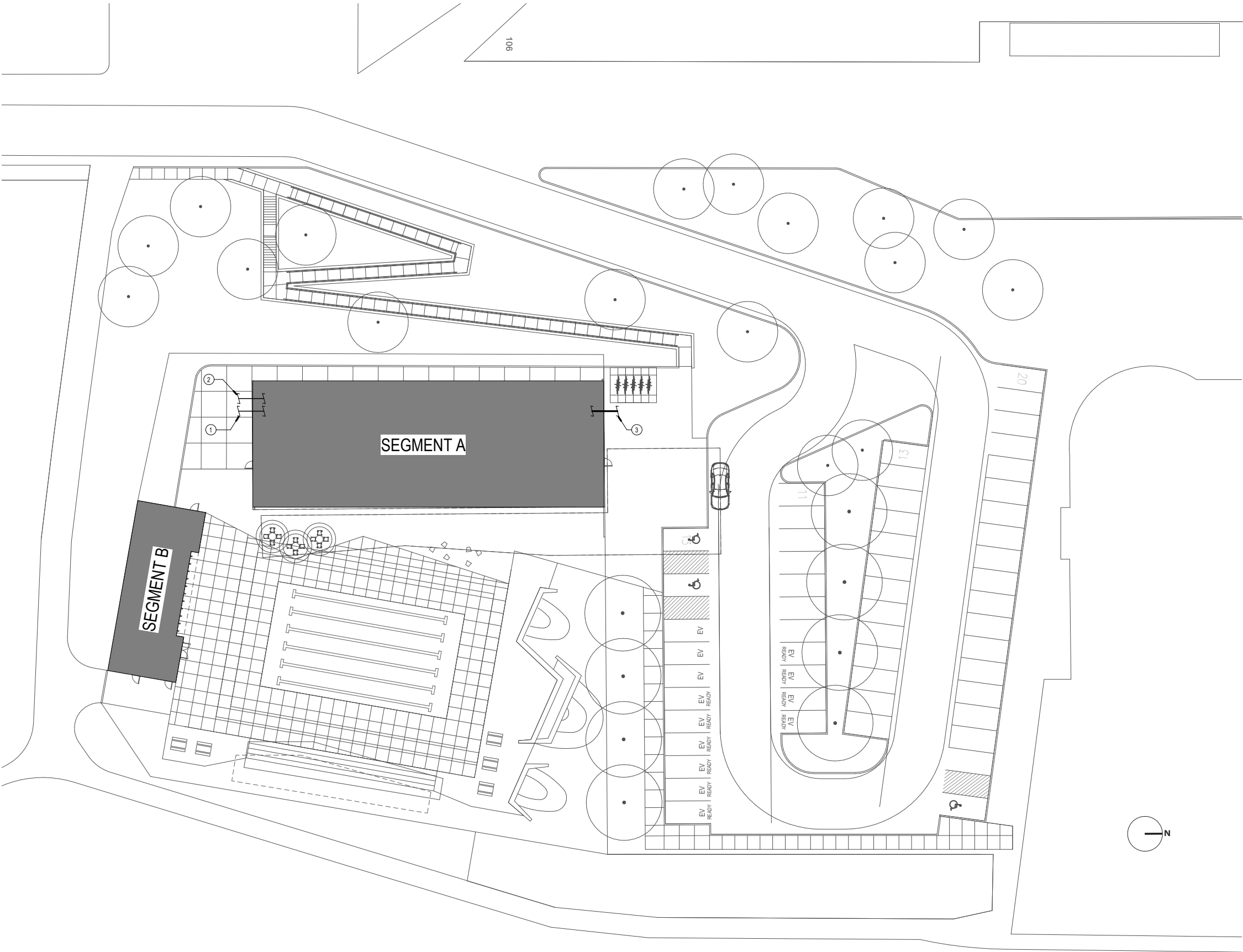
Noise and Vibration Control

Products, including toilets, urinals, and flush valves, will be selected to minimize the generation of noise and vibration into the domestic water system. A minimum 1/4- inch resilient material will be provided between domestic hot and cold-water piping, waste, and vent lines and the building structure. Specific noise and vibration control measures for domestic water, waste, and vent piping include:

- Horizontal Suspended: Eaton B-Line Series pipe saddle with felt. Provide cable seismic restraints if required by code.
- Horizontal Supported: Eaton B-line Series pipe clamp with felt.
- Riser Supports: Hubbard Holdrite Silencer #278 between riser clamp and building structure
- Partition Penetrations: Coordinate with other trades to avoid contact where plumbing penetrations occur.

Plumbing Site Plan

OPTION 1 - RENOVATION STUDY

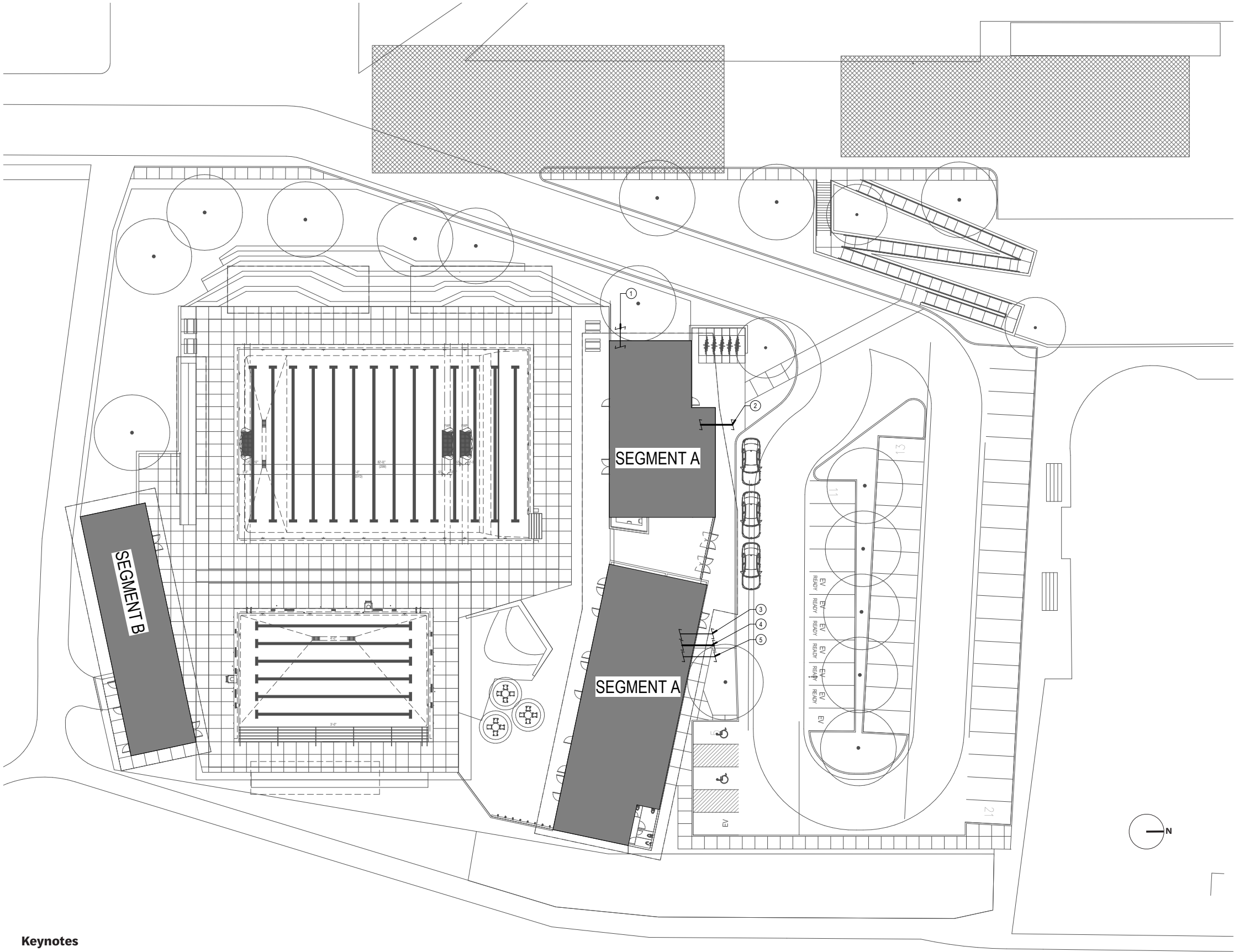


Keynotes

- ① 2.5" COLD WATER MAIN (138.5 FIXTURE UNITS)
- ② GAS MAIN (400 CFH)
- ③ 4" WASTE MAIN (118 FIXTURE UNITS)

Plumbing Site Plan

OPTION 2 - NEW FACILITY STUDY



Keynotes

- ① 2" COLD WATER MAIN (16 FIXTURE UNITS)
- ② 3" WASTE MAIN (14 FUXTURE UNITS)
- ③ 2.5" COLD WATER MAIN (193.5 FIXTURE UNITS)
- ④ 4" WASTE MAIN (144 FIXTURE UNITS)
- ⑤ GAS MAIN (500 CFH)

Electrical Basis of Design (BOD)



HMC
Architects

Electrical BOD

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

OVERVIEW

The electrical systems will be designed to provide adequate power, lighting, and communication systems for the occupancy and use of the Begg Pool Facility. The design will provide the end user with a functional, user-friendly system that is easy to maintain. The electrical systems will provide adequate flexibility for future need.

Codes and Standards

The design of the electrical systems will conform with the currently adopted editions of the following codes:

- National Electrical Code (NEC)
- Life Safety NFPA-101
- Uniform Building Code (UBC)
- State and Local Codes
- California Fire Code (CFC)
- California Energy Codes, Title 24 (CEC)

ELECTRICAL SCOPE OF WORK

Basic Electrical Materials

Raceway systems will generally consist of metal boxes interconnected with Electric Metallic Tubing (EMT.) PVC 40 will be used for underground installations. Rigid galvanized steel (RGS) conduit or intermediate metal conduct (IMC) will be used for exposed exterior work where subject to damage. The minimum conduit size for power wiring will be 3/4”.

Conductors will be copper. Insulation will be THWN or XHHW rated for 90°C; however, design will be based on 75°C ratings. Four wire feeders where neutral is considered a current carrying conductor will have an additional 80% derating. A maximum of nine current-carrying conductors, using code-designated derating factors, will be installed in any raceway. All conductors including neutrals and grounding conductors will be color-coded.

Wiring devices will be specification grade, 20 ampere, minimum, color as selected. Device plates will be stainless steel throughout building. Back-to-back installation of devices will not be allowed.

Electrical equipment shall be seismically supported per NECA and SMACNA criteria.

Electrical Service and Utility Coordination

Both the remodel and new building options will require a building electrical service that will need to be a 400A 480Y/277V three-phase four-wire system, based on preliminary electrical load calculations. The calculations also include 25% spare capacity for future growth. Service capacity will be based on the following loads:

The 480-volt switchgear will have a main breaker with full-feature electronic trip and distribution section.

Switchboard busing will be aluminum or copper braced for 65,000 AIC. A fully rated horizontal bus will be provided for all sections. Branch overcurrent devices will be bolt on circuit breakers with selectable trip. All components will be fully rated for the available AIC.

The proposed utility transformer location for both the remodel and new building options will require review and coordination with electrical utility, as the service equipment location needs to be within 100’ of the utility transformer location.

The new electrical service will be coordinated with electrical utility company for exact location and size of site utility transformer.

Grounding

The electrical power distribution system will be provided with a “single-point ground system”. The ground bus at the main service equipment will be connected to the water service, a concrete encased electrode, a deep driven ground rod, and building steel.

An insulated equipment grounding conductor will be installed with feeders and branch circuits. Metal raceways, boxes equipment, receptacles and light fixtures will be bonded to the equipment grounding system.

A separate ground system will be coordinated with the IT designers and provided in the design. This will provide #3/0 Cu ground to the IDF terminated on a ground bar within that space. This ground will be tied into the building service ground.

Ground buses will also be installed in all electrical rooms and closets. Grounding feeders shall be sized as per NEC requirements.

Power Distribution

The main electrical room will house the main switchgear. An electrical sub-panel will also be located in the Pool equipment room to minimize conduit and conductor runs for both the remodeled or new building options. The electrical rooms shall be one-hour fire-rated.

Distribution panels and switchboards will have circuit breakers. Components will be fully rated to provide the required AIC. Busing will be aluminum or copper.

Lighting panels will be commercial type with bolt-on circuit breakers. Busing will be aluminum or copper. Components will be fully rated to provide the required AIC. Each panel will have a hinged door with a master keyed flush tumbler latch. Half size breakers and load centers will not be used.

Disconnect switches will be heavy duty type. Exterior switches will be rain-tight.

Disconnect switches for packaged HVAC equipment will be fusible.

Load summaries will be provided for all switchboards, and distribution panelboards to support the electrical design. Electrical equipment requirements will be evaluated to determine proper overcurrent protection, short-circuit and ground fault protection.

Power wall boxes will be located where requested. The design team will investigate the options of all power wall box locations that would allow for power flexibility and furniture layouts that are adjusted and changed during the lifespan of the building.

Spaces such as pool chemical rooms, rooms containing electrical devices, and other systems will be designed to meet the requirements outlined within NEC Article 680.

An electrical meter will be provided for the service entrance distribution board. Optional sub meters will also be provided and can be segregated at the new panels as follows: HVAC, IDF/Telecom, process/ plug loads, domestic water, systems lighting comprehensive power, energy, and demand measurements can be collected including voltage and current, per phase minimum, maximum, and average.

Power: kVA, Watts, kVAR, and Power Factor Demand: Forward, reverse, net, sum, load profile, and export.

Emergency Systems

The building will be equipped with an emergency lighting inverter within the main electrical room. This system will be capable of providing emergency power to the emergency lighting fixtures along the path of egress.

This will provide sufficient lighting levels, in the event of an emergency and power loss, for a period of 90-minutes, per code requirements.

Providing one emergency lighting inverter will reduce maintenance risks or trouble shooting individual fixtures in hard to reach areas and can generate a test report required by code to be tested for 30 seconds monthly and 90 minutes annually.

The fire alarm system will have dedicated emergency battery backup for 24 hours in supervisory mode, followed by five minutes at full alarm.

Wiring Methods

Voltage drop calculations will be provided to limit feeders to 2%, branch circuits to 3%, or a combined voltage drop of 5%.

Lighting

Light fixtures will be selected based on performance, maintainability, and availability.

They will be coordinated with the Architectural team to meet the aesthetic and programming requirement for each space.

Interior light fixtures layout and types will be reviewed based on photometric performance calculations to provide sufficient lighting for the required space. The fixtures will be high-performance and energy-efficient. They will also meet all energy code requirements and recommendations by IES standards.

Interior lighting design will meet the following average footcandle (FC) light levels per area:

- 50 ftc in learning areas, flex areas and offices
- 30 ftc for offices and administrative areas
- 50 ftc for activities areas such as natatorium
- 20 ftc in hallways, lobbies, restrooms and support areas
- 20 ftc in locker rooms

Electrical BOD (CTD.)

OPTION 1 – RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

All light fixtures will be LED-type fixtures. They will consist of a combination of pendant, recessed, and surface-mounted fixtures based on the location and ceiling types. All back of house, maintenance, and storage areas will be industrial type LED.

The color temperature of the fixtures will be 4000K and have minimum Color Rendering Index (CRI) value of 80. All non-standard fixtures proposed by the design team will be submitted for review and approval by the City and School District at the conclusion of the DD phase. This should be part of a specific lighting design meeting between the City ,District, and design team to discuss the light fixture cut-sheets.

Exterior light fixtures will consist of wall-mounted and pole-mounted LED fixtures.

Decorative exterior fixtures may be used, such as low-level post-top fixtures, in pedestrian walkway or gathering areas. Musco sports lighting is recommended to light outdoor pool and pool deck areas.

Light levels for the exterior will meet the City requirements within its local ordinances. If local ordinances do not exist, the lighting design will be such to meet the basic standard light levels for exterior areas, as recommended by IES.

Lighting Controls

The lighting control systems will be designed to be fully dimmable to meet Title 24 requirements. This will consist of a networked lighting control system, such as nLight, that can be programmed within each space for individual schedules. The system will be capable of Demand Response to reduce all lighting to specific percentage needed by the serving utility company to reduce the building’s energy usage. The lighting system will also be capable of integrating into any building management system.

The lighting fixtures will be set to initial percentage to meet the minimum room lighting needs and provide maximum energy efficiencies. These setting can be adjusted by the end user who will be trained to make any adjustments during project closeout.

Day lighting controls will be designed for all areas required by Title 24 around window glazing. Photocells will be programmed to maintain lighting levels at the designed FC mentioned above.

Automatic shut off controls will be provided within each space. This will mainly consist of wall or ceiling mounted occupancy sensors. These devices will automatically shut off the lighting within the room once the sensors do not detect occupancy after a preset period of time. Other areas, such as the pool deck, can be scheduled to turn on and off at a predetermined time each day. This will allow the space to always maintain lighting during hours of operation. The system can be programmed to reduce the light levels by a predetermined time if no activity is detected by installed occupancy sensors. This will allow the spaces to maintain lighting but reduce levels to maximize energy efficiencies.

Fire Alarm

The design shall included a fully automatic fire alarm and mass notification system to cover the entire building conforming to CBC, CFC, NFPA 72, and ADA standards. Fire alarm system shall be a fully automatic local fire-protective signaling system and shall connect with a central station. Fire alarm system shall provide reporting capability using electrically supervised signal-initiating circuits and alarm circuits. The fire alarm system shall be comprised of the following:

- Visible and audible (speakers) devices shall be located along the corridors with spacing that meets NFPA 72 requirements and throughout entire building.

- Manual pull stations to be located in areas normally occupied as required by CFC and as requested by owner.

- Photo-Electric type smoke detectors shall be provided.

- Rate-of-rise, heat detectors shall be provided. The selection of detector types shall be based on the protection required.

- Supervision of fire sprinkler system shall be made via flow/tamper switches. Flow/tamper switches shall be located at fire riser, PIV and BFP locations.

- Signaling of fire water flow shall be made via flow bell. Tamper switches shall be monitored and reported to annunciators and central station.

- Air-Handler fan units 2000CFM and over, fire smoke dampers, and door holders shall be interfaced with new fire alarm system required by CMC and CFC.

- Fire alarm system to be tied to a building remote annunciator panel.

- Trouble and Supervisory Conditions shall report to annunciator panel and central station.

- All fire alarm circuits shall be segregated from all other signal and power circuits. Fire alarm circuits shall be installed in conduit raceway and painted red to designate fire alarm.

- Proper signage of fire alarm control panel location, circuit breakers serving fire alarm equipment and flow bell shall be required per CFC and NFPA 72.

Photovoltaic/Bess System

Photovoltaic to cover the electrical capacity for the buildings is recommender for both options.

- PV System – 80kW (Approximately 4,080sqft of roof space required)
- BESS – 60kW (located outdoors)

Photovoltaic/Bess System

Minimum PV design requirements for Option 02 (per code) are as follows:

- PV/BESS sizing shall be:
 - PV System – 30kW (Approximately 1,500sqft of roof space required)
 - BESS – 30kW in self-contained enclosure (located outdoor yard)

Ultimate PV design requirements (accommodating both options) are as follows:

- Minimum PV/BESS sizing per code shall be:
 - PV System – 80kW (Approximately 4,080sqft of roof space required)
 - BESS – 60kW in self-contained enclosure (located outdoor yard)

Design shall minimize penetrations through the roofing structure to support future roof maintenance and repair.

Integrated battery storage systems shall be apart of the solar design.

- PV Modules:
 - Minimum Panel Efficiency: 20%
 - Minimum 90% original capacity at Year 10
 - Minimum 80% original capacity at Year 25

Spacing and parapet clearance requirements must comply with the City Fire Department PV Guidelines (separate document) and OSHA regulations regarding parapet heights and safety tie-offs.

Shading by objects (structure, trees, etc.) shall be minimized or eliminated during the hours of 9:00 am and 3:00 pm all days of the calendar year.

- Inverters:
 - Minimum inverter efficiency: 96% (year 1).
 - Inverter capacity must be >= 105% of array DC Standard Test Conditions (STC) wattage.
 - Provide string inverters to reduce need for combiner boxes.
 - Indoor or protected (shaded) outdoor inverter placement is preferable.
 - Provide inverter with integral fused string, surge suppression device, and NEMA 3R enclosure (Eaton® #ESC series or approved equal). Provide fused inputs as indicated (Littelfuse® SPF series or approved equal). Fuses shall be sized based on final solar panel selection in accordance with the NEC
 - PV circuit breakers in electrical panel shall be rated as suitable for backfeed. Circuit breakers shall be sized based on final inverter selection and total PV output in accordance with the NEC

OPTION 1 - RENOVATION STUDY

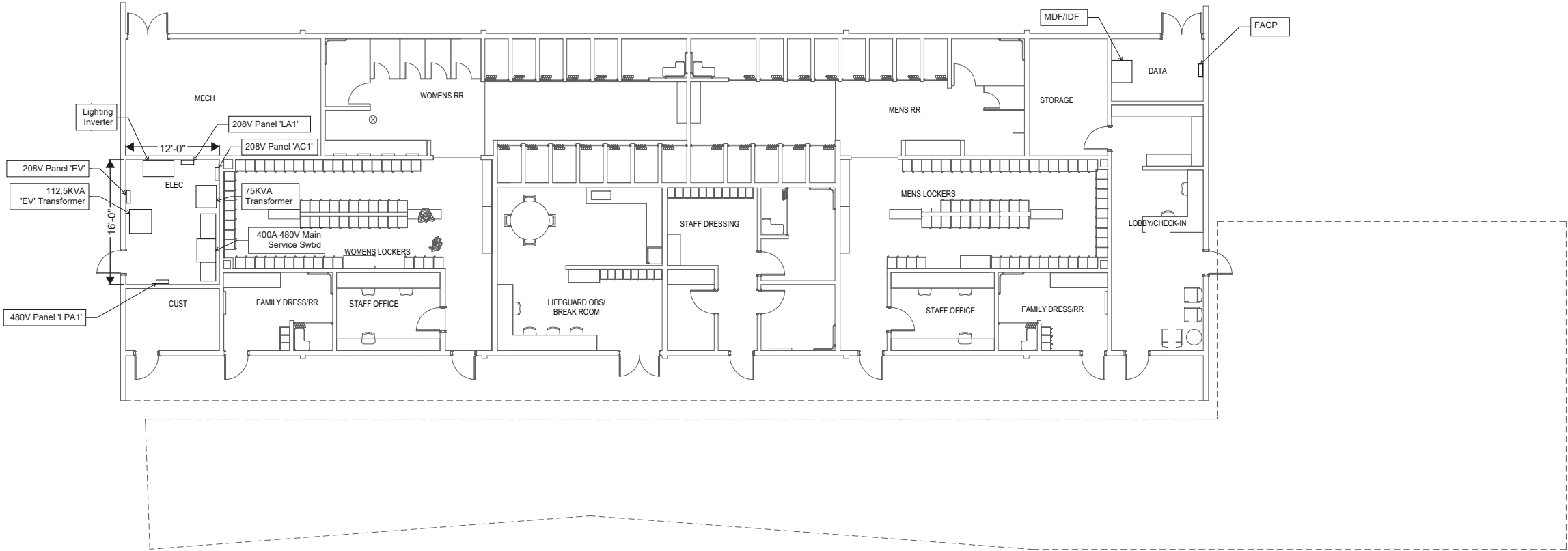
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HMC ARCHITECTS

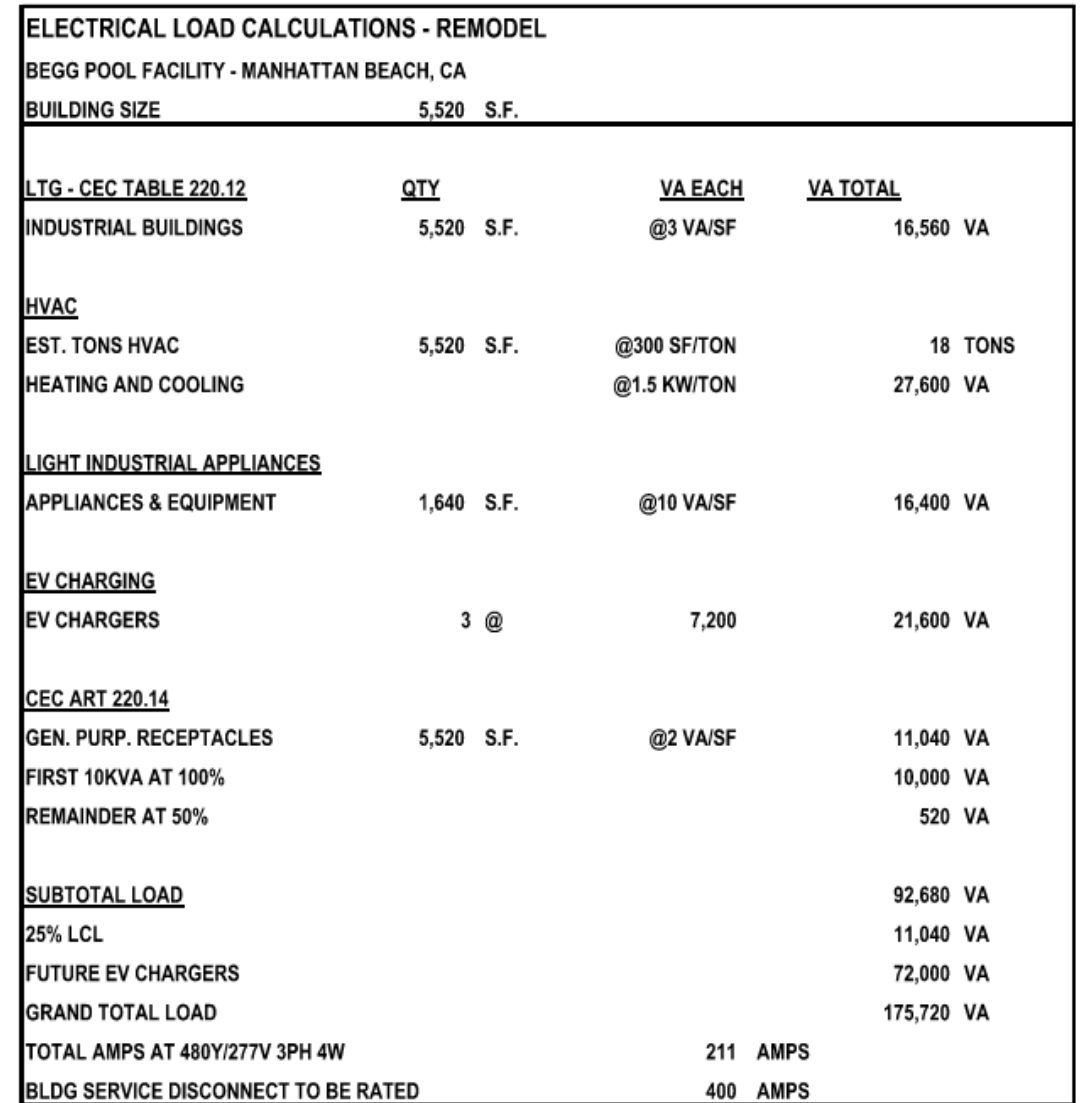


Electrical Plan

OPTION 1 - RENOVATION STUDY

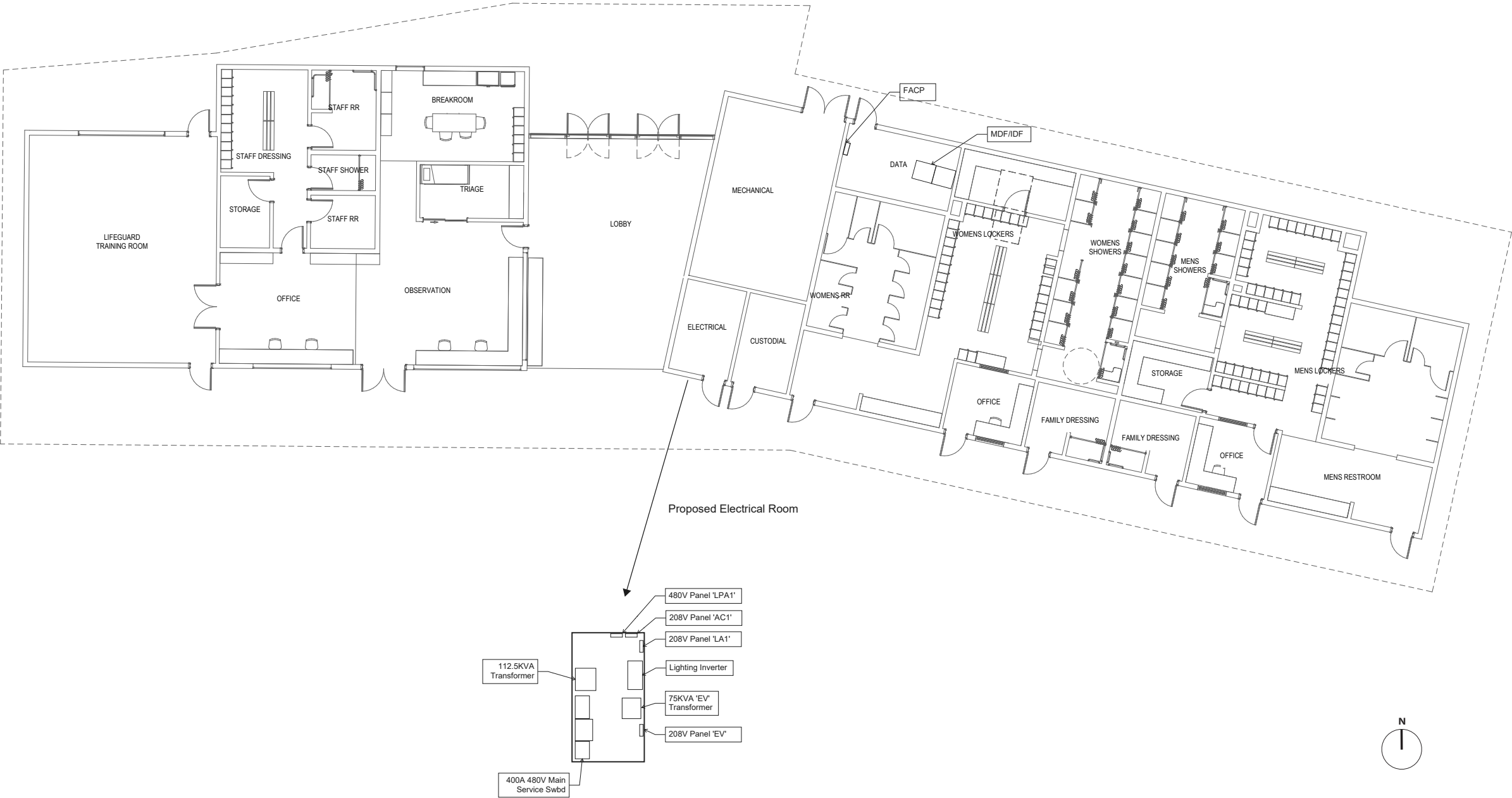


OPTION 1 - RENOVATION STUDY



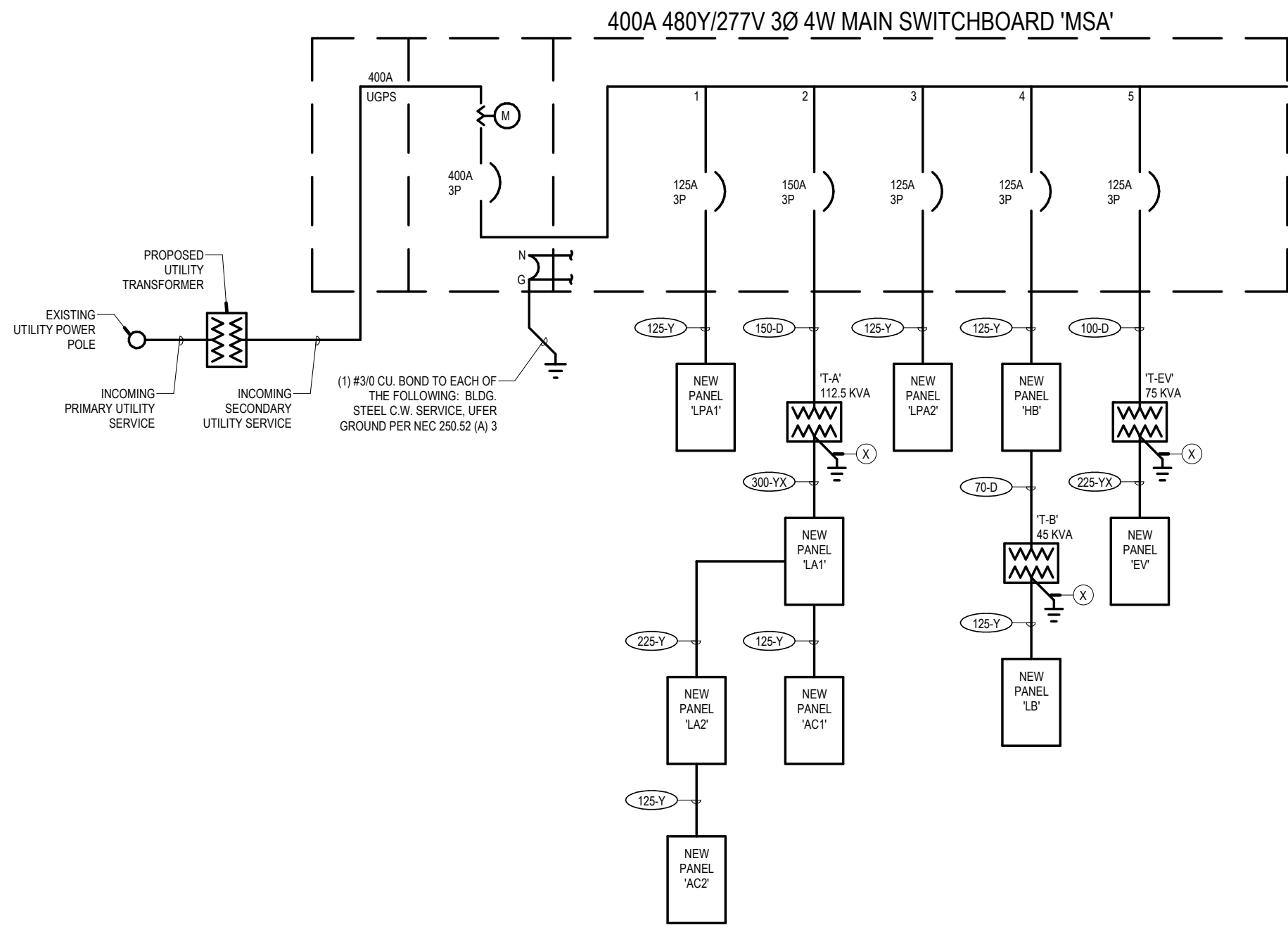
Electrical Plan

OPTION 2 - NEW FACILITY STUDY



Single Line Diagram

OPTION 2 - NEW FACILITY STUDY



ELECTRICAL LOAD CALCULATIONS - NEW			
BEGG POOL FACILITY - MANHATTAN BEACH, CA			
BUILDING SIZE	6,480	S.F.	
LTG - CEC TABLE 220.12			
	QTY	VA EACH	VA TOTAL
INDUSTRIAL BUILDINGS	6,480 S.F.	@3 VA/SF	19,440 VA
HVAC			
EST. TONS HVAC	6,480 S.F.	@300 SF/TON	22 TONS
HEATING AND COOLING		@1.5 KW/TON	32,400 VA
LIGHT INDUSTRIAL APPLIANCES			
APPLIANCES & EQUIPMENT	2,340 S.F.	@10 VA/SF	23,400 VA
EV CHARGING			
EV CHARGERS	2 @	7,200	14,400 VA
CEC ART 220.14			
GEN. PURP. RECEPTACLES	6,480 S.F.	@2 VA/SF	12,960 VA
FIRST 10KVA AT 100%			10,000 VA
REMAINDER AT 50%			1,480 VA
SUBTOTAL LOAD			101,120 VA
25% LCL			12,960 VA
FUTURE EV CHARGERS			43,200 VA
GRAND TOTAL LOAD			157,280 VA
TOTAL AMPS AT 480Y/277V 3PH 4W		189	AMPS
BLDG SERVICE DISCONNECT TO BE RATED		400	AMPS

Technology Basis of Design (BOD)



HMC
Architects

Technology BOD

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

Telecommunication Rooms

Option 1 (Remodel): One 8' x 12' MPOE/
MDF room will be located on the east side of
segment A building.

Option 2 (New): One 9' x 16' MPOE/
MDF room will be centrally located within
segment A building.

Telecommunication Room Equipment

The room shall be equipped with 3/4" thick
plywood mounted to the walls, painted
with two coats of white fire-retardant paint,
including wall-mounted punch down blocks
to establish a terminal area/cross-connect
for analog telephone, Internet distribution.
The room will have a minimum of three
120v dedicated 20-amp circuits routed to
outlets.

Two four-inch conduits from the MPOE will
be provided to utility provider on site. All
conduit stub-outs shall be watertight seal
and have metallic location tape.

Adequate ¾” fire-resistant, painted
backboard will be installed for all building
facilities and service provider equipment.
If the farthest point of each data drop
exceeds 300 linear feet to the local MDF
room, additional IDF spaces will be required.

The MDF/IDF room shall be provided with
open frame 19” racks to support incoming
and outgoing terminations, cabling,
patching, cable management, etc. Rack-
mounted patch panels and wall-mounted
110 blocks, are standard for data and voice
termination.

Each network rack or cabinet will have a
minimum of two 120v dedicated 20-amp
circuits NEMA 5-20 outlets located on the
top.

The MDF/IDF room will need to be air-
conditioned and humidity-controlled
24/7/365. The MDF/IDF room will have a
minimum of three 120v dedicated 20-amp
circuits and three 208v 30-amp circuits to
outlets. The room will have one wall covered
with a fire-rated plywood finished and
painted on one side.

Signal Grounding System

The design shall provide the grounding
system with a direct connection to earth.
The grounding system shall be isolated from
the building electrical safety ground system
except for a single point of connection
between the two systems at the main
service ground bus. Grounding of all low-
voltage system shall be in conformance with
BICSI standards. The grounding system shall
include all of the following elements:

- A separate copper cable connection
from the building’s main ground bus to
the low-voltage system ground bus at
the MPOE. Each MDF and IDF ground
buss bars shall only be connected to the
MPOE ground bus.
- Code-required size of ground
conductor between the main building
ground and the MPOE.
- All ground connections shall be long-
barrel, bi-metal, pressure indented
two-hole lugs, machine bolted with flat
washers, and lock washers installed.

Backbone Cabling

Fiber Optic: Strands: 12 pair minimum, six
pair single-mode fiber, six pair multimode
fiber, confirmed with ITS for building needs
unless otherwise specified.

Rating: OSP rated: Copper Trunk Cables.
Pairs: 50 pair minimum, 24 gauge, Rating:
OSP rated.

Horizontal Cabling

Station cable shall be part of the
Commscope NETCONNECT solution.
Copper station cable (Category 6A,
Plenum), 100 ohm, balanced twisted pair
cable complying with TIA-568.2 and listed
and labeled as complying with UL 444.

Cable jacket and connector color shall
comply with City and District requirements.
Cables will not exceed 300 foot runs in a
star topology network configuration.

Wireless Access

Wireless Access Points (WAP) are to be
provided throughout the building and
in designated administration areas. The
building will maintain 100% wireless
connectivity.

04.26.2024
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HMC ARCHITECTS

Task Five Cost Estimate



HMC
Architects

Conceptual Cost Plan Draft

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY

BEGG POOL FACILITY MODERNIZATION STUDY

MTI Job No. 23-0976

City of Manhattan Beach
Manhattan Beach, CA

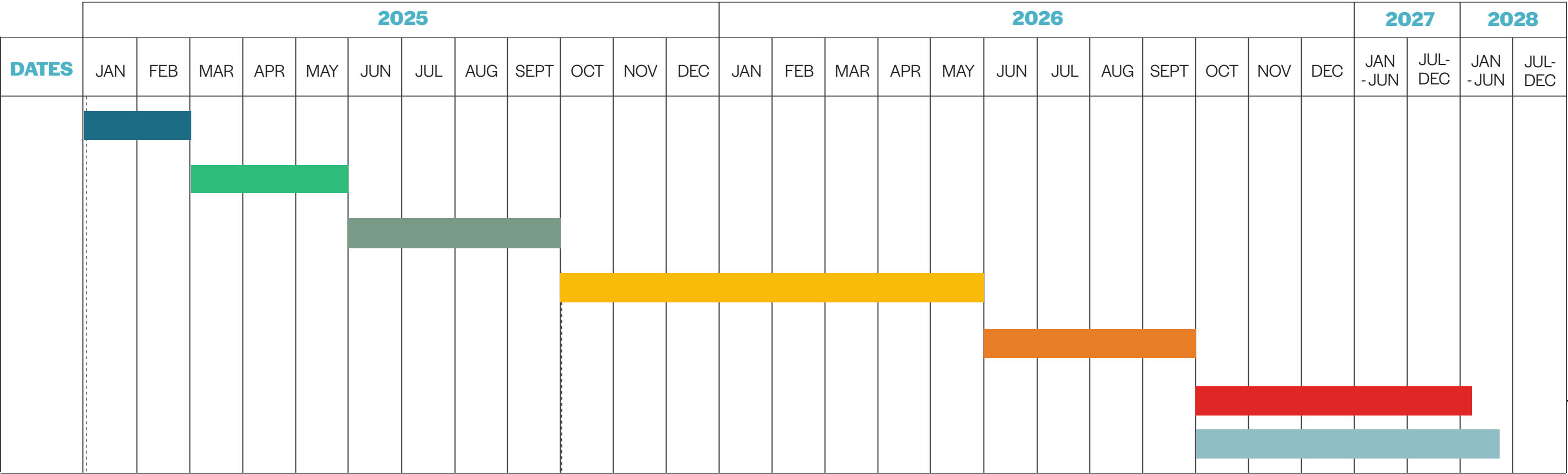
Overall Areas			
	Enclosed	Covered	Gross
Option 1	7,471 SF	4,893 SF	9,918 SF
Option 2	9,608 SF	5,503 SF	12,360 SF

Overall Project Cost Summary		
Option 1		
Construction Cost		\$19,925,842
Site Cost		\$6,432,807
Building Cost		\$10,503,908
Pool Cost		\$2,989,127
Project Soft Costs		\$8,038,389
Total Project Costs		\$27,964,231
	Annual Operating Expense	\$802,277
Option 2		
Construction Costs		\$29,680,076
Site Cost		\$6,648,045
Building Cost		\$13,161,486
Pool Cost		\$9,870,545
Project Soft Costs		\$10,672,904
Total Project Costs		\$40,352,980
	Annual Operating Expense	\$1,802,369

Alternates (Applicable to both options)	
Peck Avenue Corridor	\$2,516,752
Solar Enhancements	\$1,376,349
Phased Construction (Option 2)	\$5,000,000

Conceptual Project Schedule

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY



NTP/KICK-OFF MEETING

DIVISION OF THE STATE ARCHITECT SUBMITTAL

OPENING DAY
OPT 1: FEB 2028
OPT 2: APRIL 2028

- SCHEMATIC DESIGN (2 MONTHS)
- DESIGN DEVELOPMENT (3 MONTHS)
- CONSTRUCTION DOCUMENTS (4 MONTHS)
- PLAN REVIEW & APPROVAL (8 MONTHS)
- BID/PROJECT AWARD (4 MONTHS)
- OPT 1: CONSTRUCTION ADMINISTRATION (16 MONTHS)
- OPT 2: CONSTRUCTION ADMINISTRATION (18 MONTHS)

Appendix



Parking Studies



HMC
Architects

Parking Study

OPTION 1 - RENOVATION STUDY

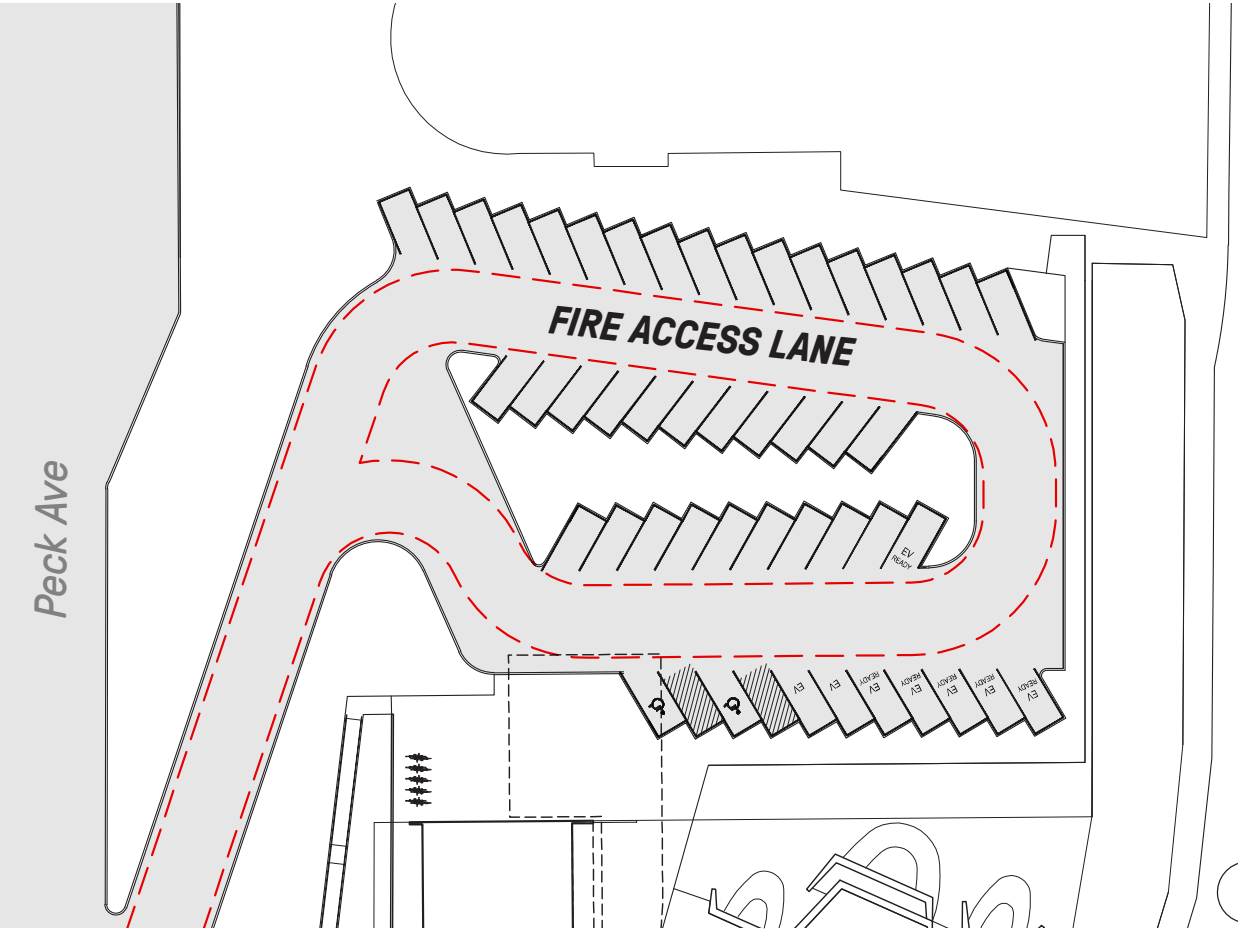
OPTION 1.A
90 DEGREE STALLS

Total Parking	54
Accessible	3
Van Accessible	2
EV Capable Spaces	13



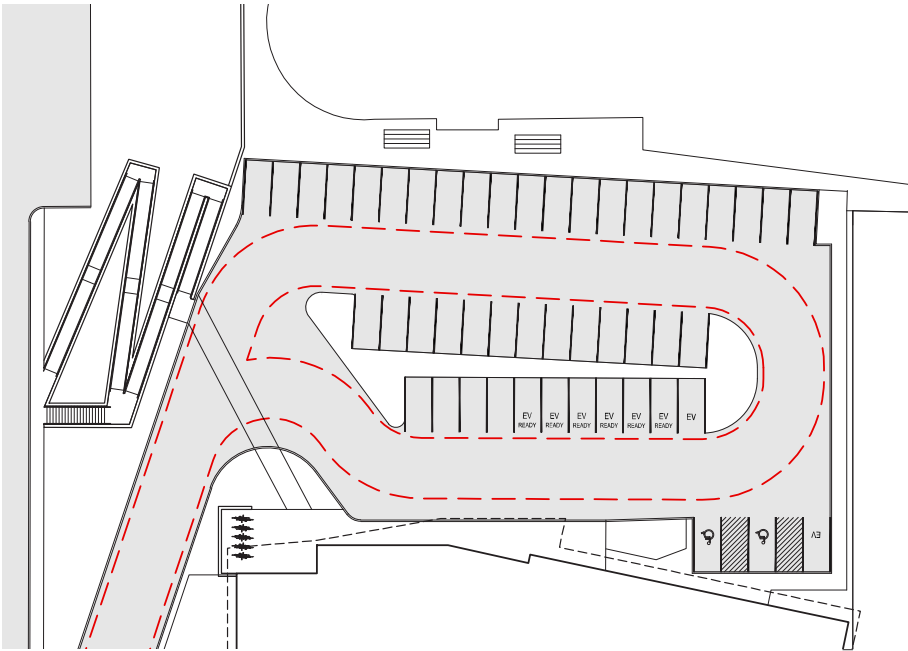
OPTION 1.B
60 DEGREE STALLS

Total Parking	47
Accessible	2
Van Accessible	1
EV Capable Spaces	8



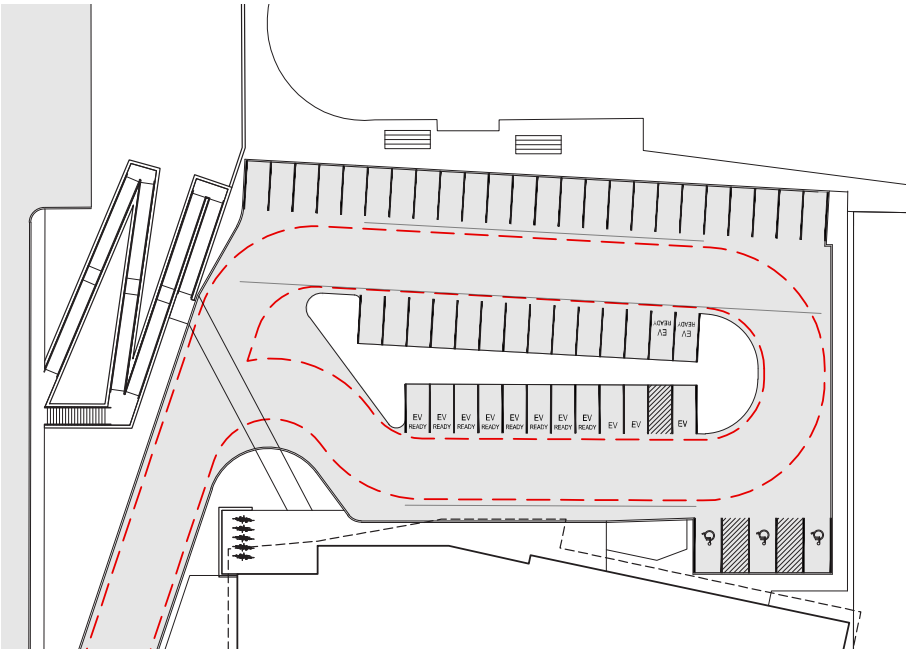
Parking Study (CTD.)

OPTION 2 - NEW FACILITY STUDY



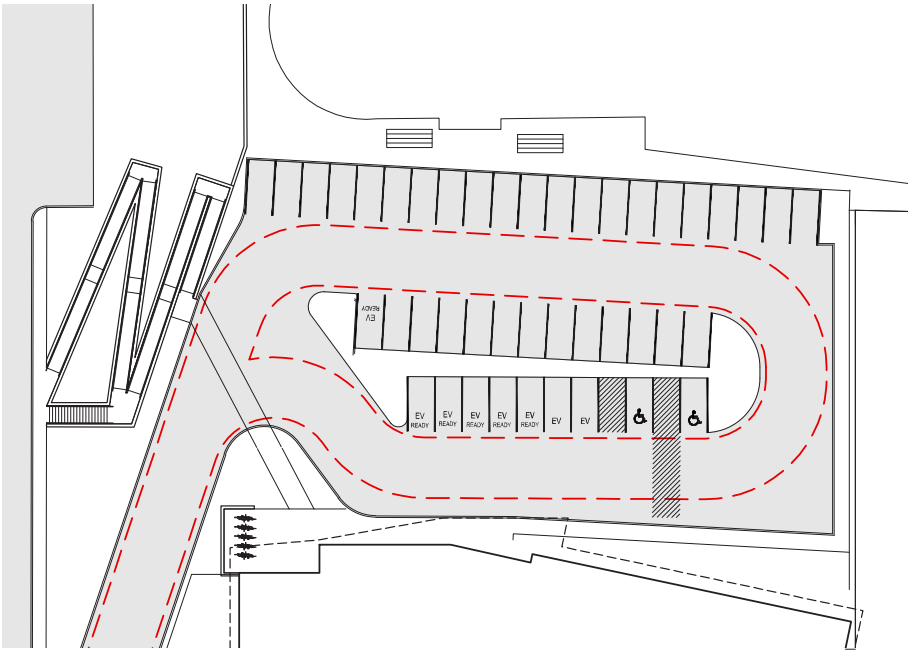
OPTION 2.A
90 DEGREE STALLS,
REGULAR

Total Parking	48
Accessible	2
Van Accessible	1
EV Capable Spaces	8



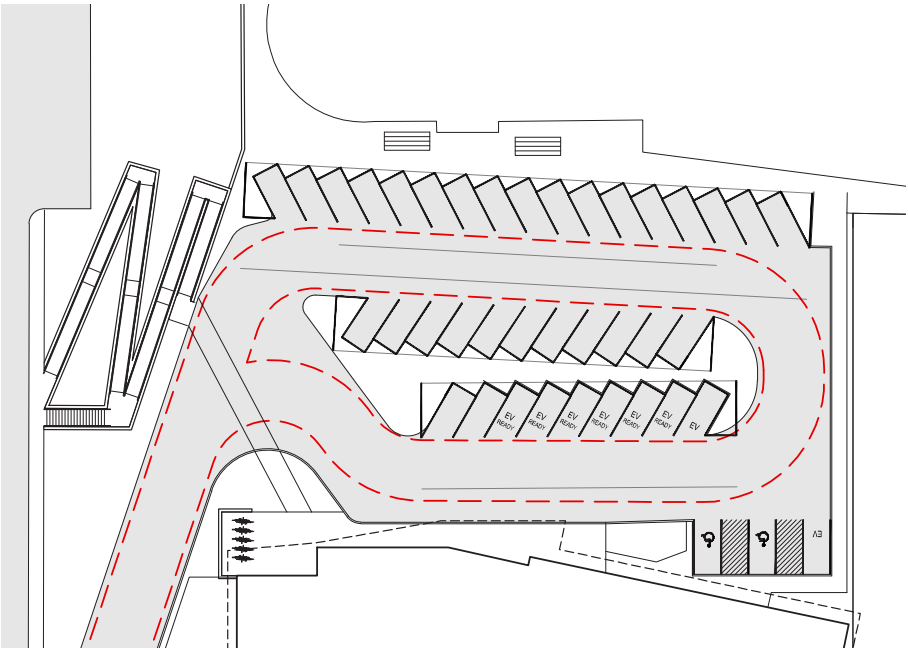
OPTION 2.B
90 DEGREE STALLS,
COMPACT

Total Parking	52
Accessible	3
Van Accessible	2
EV Capable Spaces	13



OPTION 2.C
90 DEGREE STALLS,
STRAIGHT BUILDING

Total Parking	43
Accessible	2
Van Accessible	1
EV Capable Spaces	8

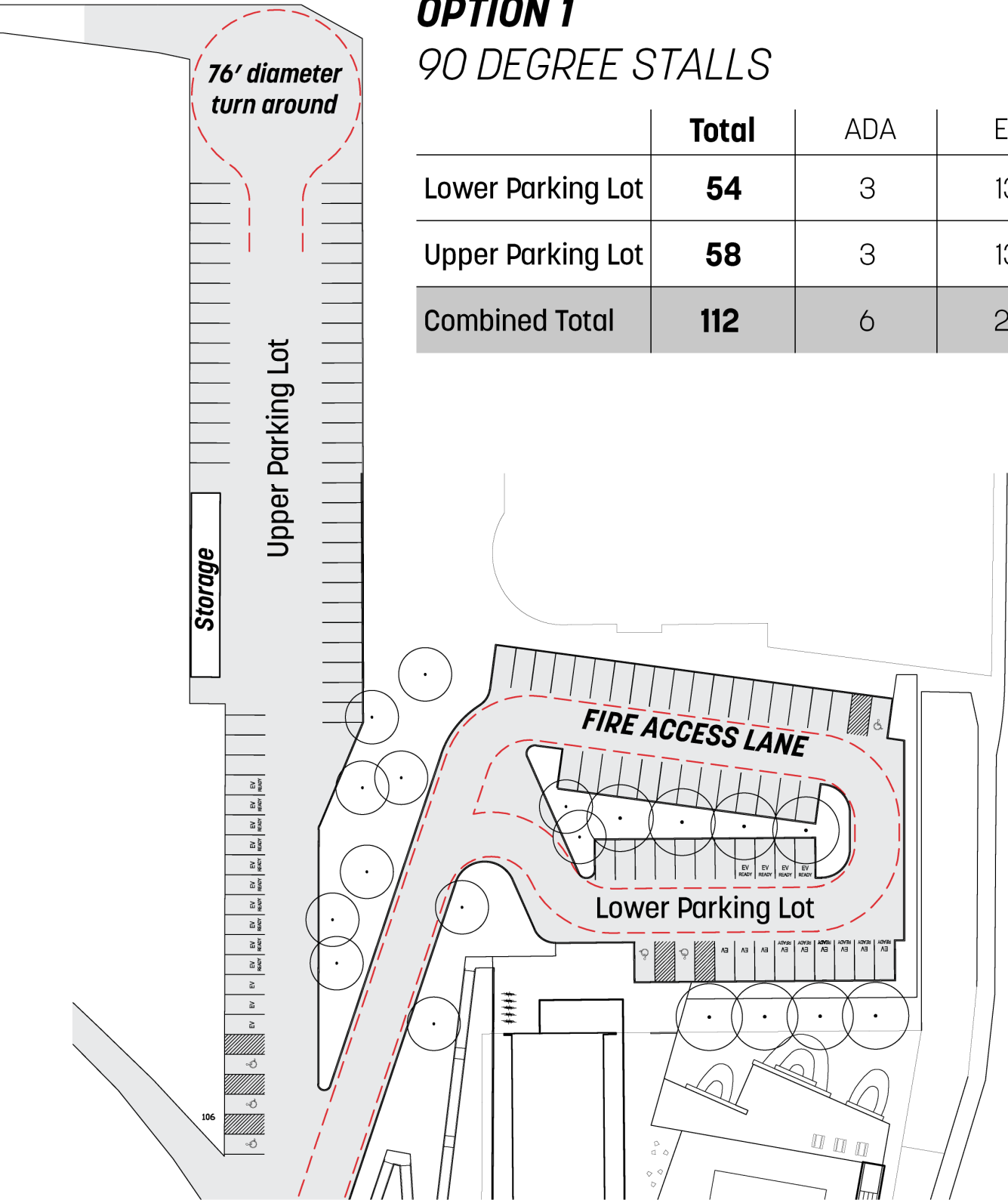


OPTION 2.D
60 DEGREE STALLS,
REGULAR

Total Parking	40
Accessible	2
Van Accessible	1
EV Capable Spaces	8

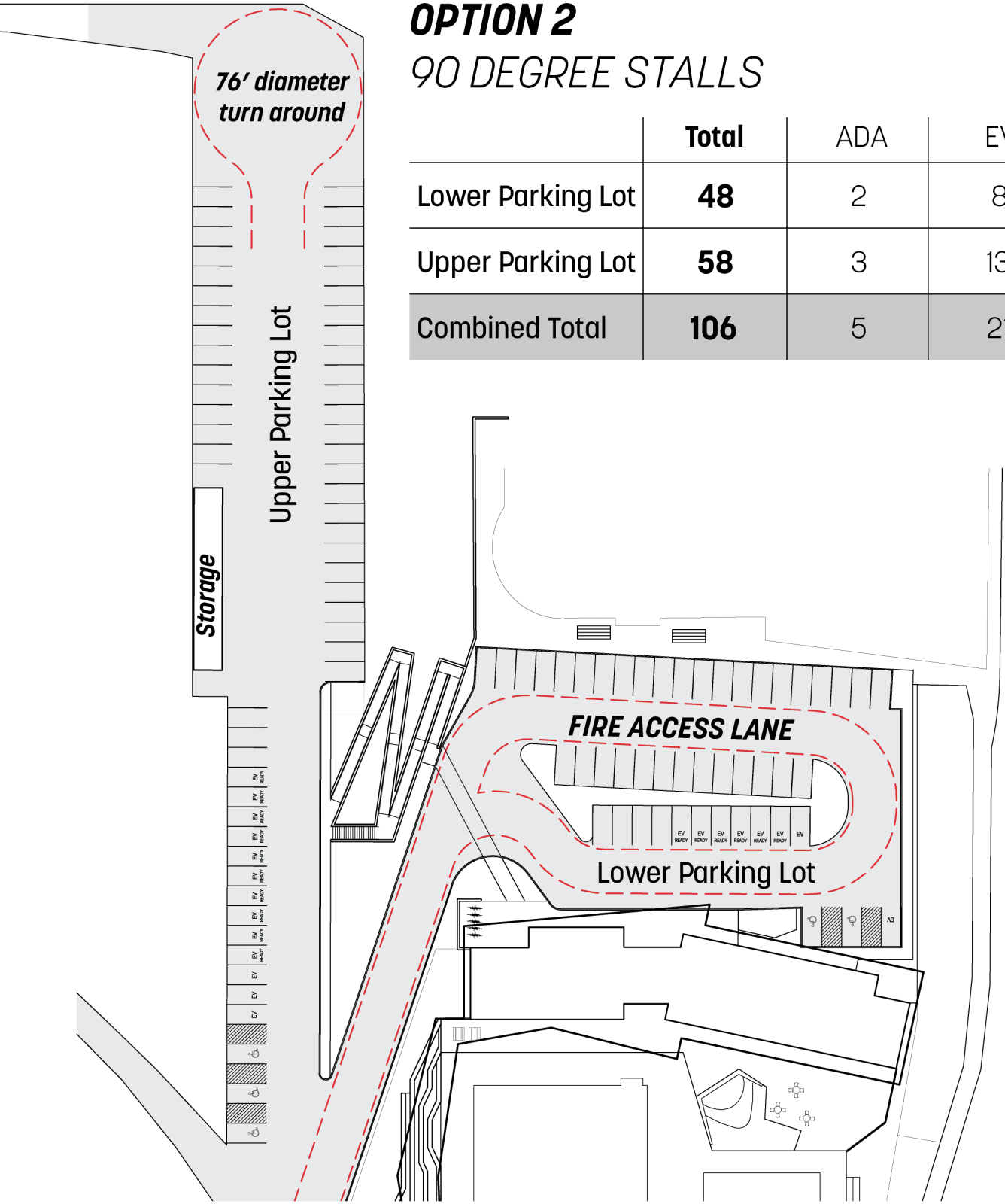
Peck Avenue Corridor
Improvements Study

OPTION 1 - RENOVATION STUDY &
OPTION 2 - NEW FACILITY STUDY



OPTION 1
90 DEGREE STALLS

	Total	ADA	EV
Lower Parking Lot	54	3	13
Upper Parking Lot	58	3	13
Combined Total	112	6	26



OPTION 2
90 DEGREE STALLS

	Total	ADA	EV
Lower Parking Lot	48	2	8
Upper Parking Lot	58	3	13
Combined Total	106	5	21