

Amy Yee Tennis Center (AYTC) Expansion and Facility Repairs Feasibility Study

May 2019



Seattle
Parks and Recreation

Prepared By:



OAI PS
Architecture and Planning

Osborn Architects, PS
1011 Klickitat Way, Suite 208
Seattle, WA 98134

Note:

This PDF file is paginated to print double sided on 8 1/2" x 11" paper, with the exception of the last two pages, which are full size drawing sheets at 24" x 36" landscape format.

Table of Contents

Introduction.....5

Section 1: AYTC Demographics.....7

Demand 9

Social Justice 9

Affordability 10

Section 2: AYTC Building Expansion.....13

Location 15

Existing Critical Areas 18

Utilities 19

Sewer 19

Storm Water 21

Topography and Boundaries 23

Sustainability 25

Section 3: Existing Building/Facility Repairs..... 27

Court Sizing and Surfacing 29

Structure 29

Roofing 30

Lighting 31

Heating and Ventilation 31

Water Intrusion 32

Section 4: Phasing and Costs.....33

Replacement vs. Retrofit 35

Phasing Rationale 35

Section 5: Appendix.....37

Appendix A: Energy code compliance calculation for existing building 41

Appendix B: 2016 Seismic report 45

Appendix C: Cost estimates by phase:

C.1 Phase A1 51

C.2 Phase A2 61

C.3 Phase A3 67

C.4 Phase B1 73

C.5 Phase B2 77

Appendix D: Works cited 83

Appendix E: Proposed new building layout drawings 87

INTRODUCTION

The Amy Yee Tennis Center (AYTC) is requesting funding from Seattle Parks and Recreation in order to meet the growing public demand for affordable and accessible year-round tennis play in the City of Seattle (City). The purpose of this funding request is to improve tennis play and expand community gathering space at the existing ten-court indoor facility and to develop a new five-court indoor facility.

The request contains two major funding initiatives. The first is to fund necessary upgrades to maintain the existing indoor ten-court facility at a high quality of play and functionality. The second initiative is to expand the capacity of the tennis center with the creation of a new indoor five-court facility, which would also allow the opportunity to introduce community functions into the existing facility. The new indoor five-court facility will create capacity for a new multi-purpose space, establishing AYTC as the only City-run community space that provides affordable year-round tennis and youth programs.

The planned renovations for the existing ten-court facility include:

- Replacement of the aging, leaking roof
- Selective seismic improvements to improve the lateral support for the building
- A new heating & ventilation system designed to create an environment suitable for all season play
- Installation of an energy efficient lighting system

PROPOSED PROJECT FUNDING

The funding is conceived in five distinct phases. The first four phases are associated with upgrading the existing facility (Phases A1, A2, A3, B1) and phase B2 is associated with a new facility. Phases A1, A2 and A3 must occur in in sequence, but phases B1 and B2 are independent and can occur at any time.

EXISTING FACILITY IMPROVEMENTS

Phase A1 includes the creation of interior and exterior universal access in addition to insulating the exterior walls to improve indoor thermal comfort. **Phase A2** involves facility and maintenance repairs, including the installation of a new roof and roof insulation. **Phase A3** provides a new court area heating and ventilation system as well as new energy efficient lighting. **Phase B1** is optional and would reconfigure the existing administration area and mezzanine to provide more community gathering space and amenities.

NEW FIVE-COURT FACILITY

Phase B2 is the construction of the new five-court indoor facility – the top AYTC user priority. To maximize the community gathering space after the new courts are constructed, **Phase B1** would reconfigure the existing building’s administration area and mezzanine.

Phase	Scope of Work	Schedule/Comments	Estimated Project Costs
Phase A1	• Site ADA • Toilet, Court and Admin Area ADA • Fire Alarm Upgrades • Entry Soffit replacement	• Summer/Fall of 2019	2.1 Million
Phase A2	• Over-roof and roof assembly insulation • Voluntary structural upgrades of cross bracing tension rods	• To be determined based on available funding. • Recommend construction not prior to summer/fall of 2022	3.5 Million
Phase A3	• New court area heating & ventilation • Replace court lighting	• To be determined based on available funding • Recommend construction not prior to summer/fall of 2025 (assuming exterior wall insulation has been installed as per the Memorandum of Understanding with the City's Office of Sustainability & Environment)	3 Million
Phase B1	Interior Renovation • Community multipurpose room • Platform lift & egress stairs at mezzanine • Modify administration area for pro shop & viewing area • All-gender toilet/locker room	• To be determined based on available funding • Tenant Improvement work does not affect Substantial Alterations work phasing	1 Million
Phase B2	AYTC Expansion (five court building addition)	• To be determined based on available funding • Recommendation to establish upper parking area prior to construction of new building so that existing facility can be utilized during construction	22.5 Million

Recommended phases of work

The above estimated project costs are “fully loaded”, including soft costs such as outreach, design, project administration, taxes and contingency.

PHASING PRIORITY

Renovating the existing facility will not provide any additional capacity at the site to meet increasing demand. Therefore, the highest priority is to address Phase B2 to provide five new courts. Given that Phase A1 is funded, it is also urgent that Phase A2 funding is considered given that the roof on the existing facility is well beyond its service life and already a source of significant maintenance.

SECTION 1:

AYTC Demographics

SECTION 1: AYTC DEMOGRAPHICS

The AYTC is the largest public tennis facility in the Puget Sound area, consisting of ten indoor courts and six outdoor courts [1]. Operating since 1977, AYTC welcomes more than 100,000 visitors each year from the greater Seattle area. Age, overuse and Seattle's rainy and cold season has caused significant damage to this facility. It is confirmed that AYTC needs major capital maintenance such as roof replacement, ADA access, exterior painting, and improved heating/ventilation systems [2]. Moreover, the City Tennis and Basketball Court Program in the Parks Asset Management Plan has a \$1.1 million backlog in recognized, needed court maintenance [3]. Despite the necessity for major improvements, court usage remains at an all-time high, and the availability of existing courts cannot meet demand. The desire to meet this unmet demand has prompted consideration for a building expansion, featuring new, sustainable improvements coupled with a retrofit of the existing facility.

The following pages detail expanding the AYTC, including the creation of a new, enclosed, and temperature controlled building adjacent to the existing facility, in order to increase the covered court capacity by at least five courts. Also included is the evaluation of a new replacement of the existing AYTC as well as the cost implications and savings for retrofitting the existing facility in concert with the proposed expansion.

A. DEMAND

The Seattle Parks and Recreation Department developed its Legacy Plan in 2014. The plan, created to foster an appreciation of the City's regional parks and facilities, identifies places like AYTC as unique to the neighborhoods in which they are located, in addition to the thousands of visitors from across the region. One of the plan's specific goals is to ensure that all residents have equal access to tennis [4]. However, AYTC is one of only two public indoor/outdoor tennis facilities in the King County area, serving 1.9 million people [5].

Seattle's continued population growth suggests the amount of available and existing courts cannot meet demand [6]. AYTC has been operating at capacity for the past several years with wait lists for programming and court time [7]. In addition to providing lessons, programs, camps, flights, tournaments, and leagues, AYTC hosts local public and private schools and serves community organizations. If AYTC added additional indoor courts, local schools and community organizations have expressed interest in using these extra courts [8].

AYTC is open to both Seattle and non-Seattle residents. Its courts are available for use daily with weekday operations ranging typically from 7 am to 10:30 pm and weekend operations from 7 am to 9 pm. AYTC support staff confirms the indoor courts are at 100% utilization for most hours of operation. There is some capacity at the early morning and late evening rental times on weekdays. However, overall, facility utilization remains at 95%. This data serves as additional supporting evidence that court expansion is warranted.

The following are some of the many groups using AYTC facilities:

USTA- League players	Seattle University Men's and Women's Tennis
USTA- Tournament Adult	Seattle Public Schools- Garfield High School
USTA- Tournament Youth	Seattle Tennis and Education Foundation
King County Cup League	Amy Yee Tennis Foundation
Adult Students	Bush School
Youth Students	Seattle Academy of Arts and Sciences
General public rentals	Cascade Middle School League
Senior Populations	Seattle Tennis Alliance (LGBTQ)

There is a demand for a community space that has been expressed by a number of the above groups. Options for creating a new community gathering space, either in conjunction with the expansion proposal or as a retrofit to the existing facility, have been included in this study.

B. SOCIAL JUSTICE

Ten years ago, the City launched its Seattle Race and Social Justice Initiative (RSJI), a citywide effort to end institutionalized racism and race-based disparities in City government [9]. As it relates to RSJI, the City's Parks and Recreation Department remains committed to providing maximum access and opportunities to people of color and immigrant and refugee populations to parks, programs and services, as well as facilities like the AYTC in Seattle. [10]. To this end, results from the City's 2014 Racial Equity Community Survey determined that gathering places, like AYTC, are often community anchors grounding a community and providing a strong network of support [11].

As the City's only publicly owned and operated indoor tennis facility, AYTC does not require membership and is the only facility of its kind west of Lake Washington [12]. Therefore, maintaining and expanding this type of access to indoor tennis has played a key role in AYTC operations, since its inception. The continuation of this goal as well as supporting the spirit of community tennis is vital to the expansion effort [13].

C. AFFORDABILITY

AYTC is a valuable public benefit, providing an avenue for quality tennis at a lower cost than similar, private facilities in the Seattle area; thereby, serving a wider income demographic than all its counterparts. Below is a comparison between costs for use of courts at AYTC versus competing, private indoor facilities. In addition to no membership fees, on average, court rental costs at AYTC are generally \$6-\$10 less than at competing private indoor court facilities; making AYTC more attractive for a lower income demographic.

a. AYTC

- Membership Fee:
 - There is no membership fee for use of AYTC courts. There is a \$60 annual fee in order to make telephone reservations; however there is no fee for making in-person reservations up to 6 days in advance.
- Court-Use Costs (For Seattle residents. Costs are slightly higher for non-Seattle residents):

- Singles - \$34/court; Doubles \$42/court

b. Private Facilities (Tennis Center Sandpoint)

- Membership Fee:
 - A \$99 annual membership fee is required. That membership fee is reduced to \$65 for eligible seniors.
- Court-Use Costs:
 - Standard Time: Singles - \$40/court; Doubles \$48/court
 - Prime Time: Singles - \$44/court; Doubles \$52/court
 - Early AM and Late PM: Singles - \$25/court; Doubles \$25/court

c. Private Facilities (Seattle Tennis Club)

- Membership Fee: (There is a 8-10 year wait list)
 - A one-time initiation fee of \$35,000
 - Monthly dues of \$247
- Court-Use Costs:
 - None

Current AYTC users are primarily from diverse neighborhoods in Central and South Seattle. AYTC not only sets court rates that are affordable to this community, it creates partnerships with local schools and organizations, as well as hosting leagues and programs. AYTC provides scholarships for youth classes, offers free junior public court time, and discounted rates for seniors [14]. Additionally, the Seattle Tennis and Education Foundation (STEF), a new, non-profit organization with a mission to provide opportunities for low-income youth through tennis, mentorship and educational enrichment, currently has an agreement with AYTC allowing them use of the tennis center at a reduced rate [15].

AYTC is well positioned to provide indoor tennis play to underserved communities and particularly underserved youth in Seattle. AYTC, located in Rainier Valley, sits amongst many public schools; two major Seattle public high schools: Garfield and Franklin, Washington Middle School, and two elementary schools: Beacon Hill and Thurgood Marshall. These schools are demographically diverse with nearly half of all students qualifying for free or reduced meals. These schools are a representative cross section of the neighborhoods they inhabit, and AYTC's presence makes indoor tennis play and skill development available to a more diverse population than any other indoor tennis facility in the Seattle area [16].

SECTION 2:

AYTC Building Expansion

SECTION 2: AYTC BUILDING EXPANSION

AYTC has been in continuous operation for over four decades, serving residents and visitors throughout the Puget Sound. It's mission, to ensure all people have access to tennis, remains at the forefront of AYTC's daily activities. The only way AYTC can continue this legacy and adequately serve current and future indoor tennis needs is to (1) Retain the use of the existing ten-court indoor facility and (2) Expand the tennis center to include additional courts. See figure 4.1 for recommended improvement phases.

A. LOCATION

We propose locating the new indoor tennis facility on the Southwestern quadrant of the existing lot. This location was chosen for several reasons. The most critical goal is maintaining an accessible connection from the existing facility to the new building and the new parking lot. Other advantages for selecting this specific quadrant are its visibility on an arterial street, as well as allowing for a taller buildable zoning envelope, which would have not been possible on any of the upslope portions of the current lot. The proposed location of the new building also allows for elevator access from the parking lot to the new and old buildings.

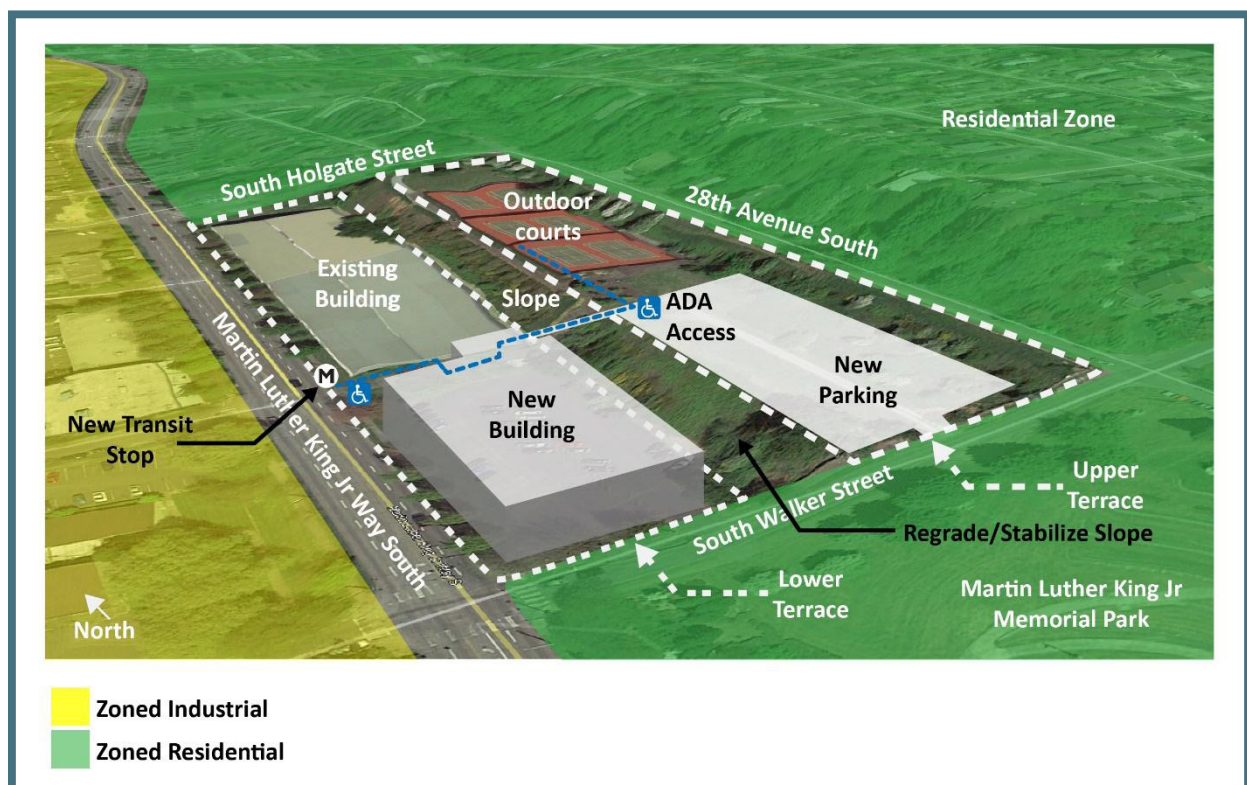


FIGURE 2.1 Existing zoning and proposed site development

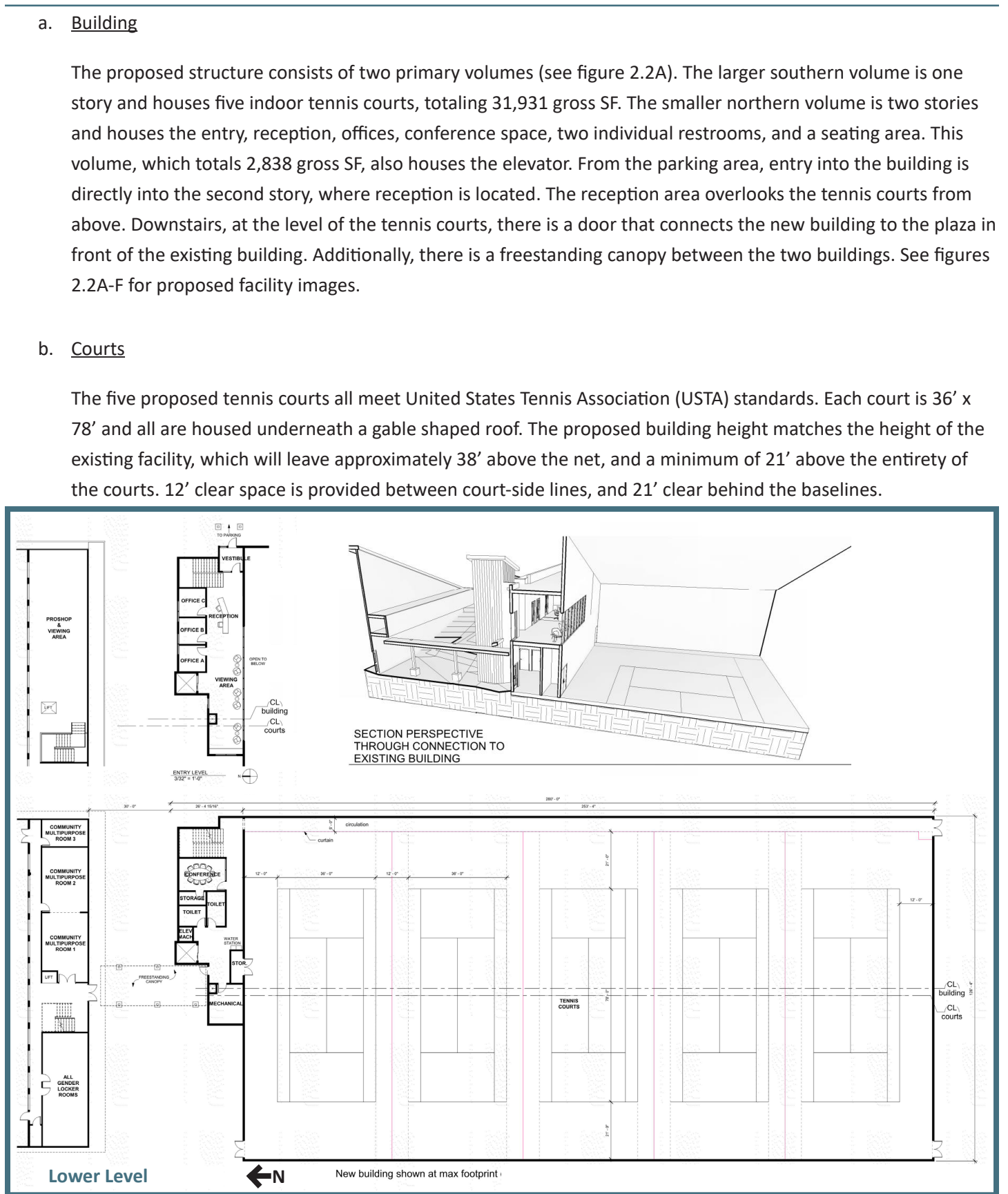


FIGURE 2.2A Proposed new building layout. See appendix E for larger drawings.

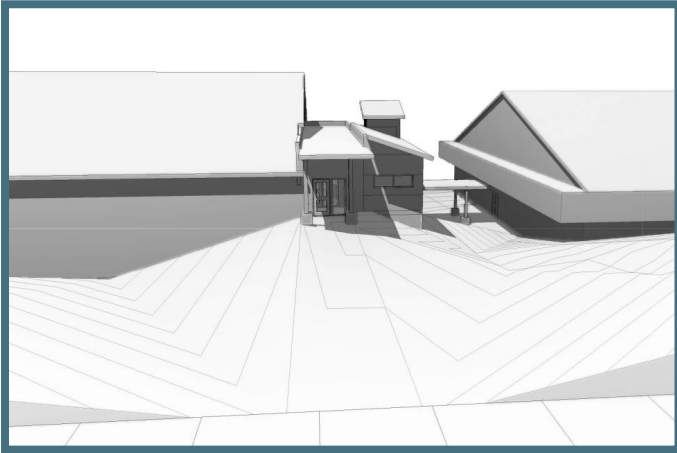


FIGURE 2.2B View from new parking area to upper level entry of new building

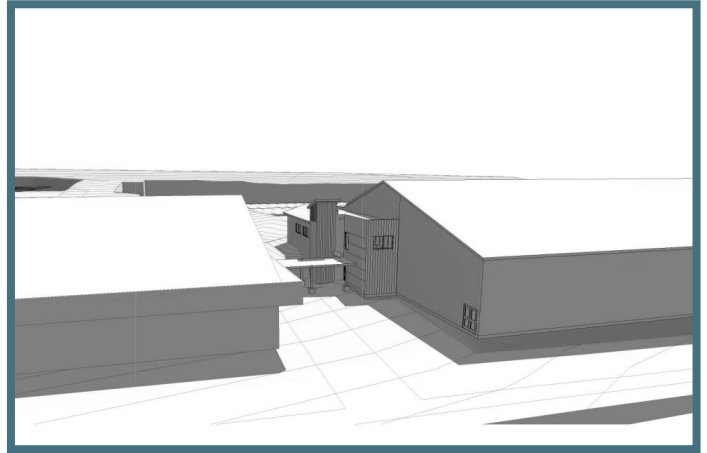


FIGURE 2.2C View from MLK Jr. Way towards new building

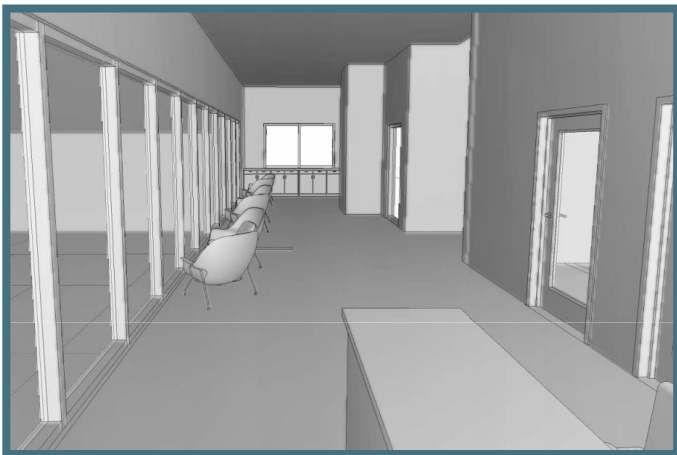


FIGURE 2.2D View from reception to court viewing area

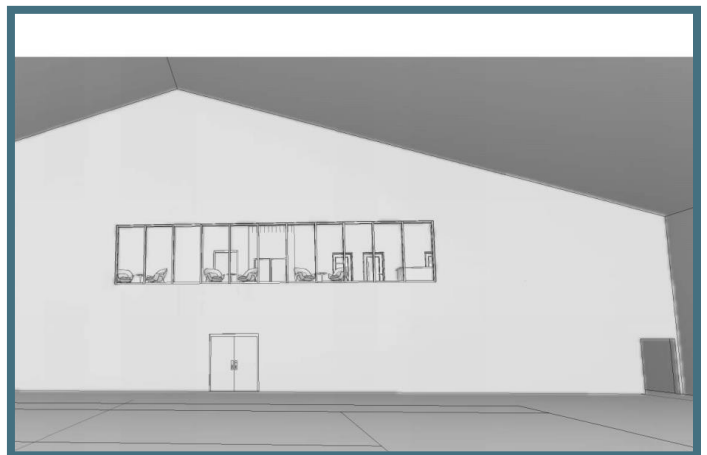


FIGURE 2.2E View from courts to upper level viewing area



FIGURE 2.2F Proposed site plan. See appendix E for larger drawings.

B. EXISTING CRITICAL AREAS

Critical areas, which are present on site, are due to the steep topography of the property. Shown below as blue hatched areas, the critical area slopes are greater than 3:1 (refer to Section F, Topography and Boundaries for mitigation measures for the steep slopes). No other critical areas are present on the site.

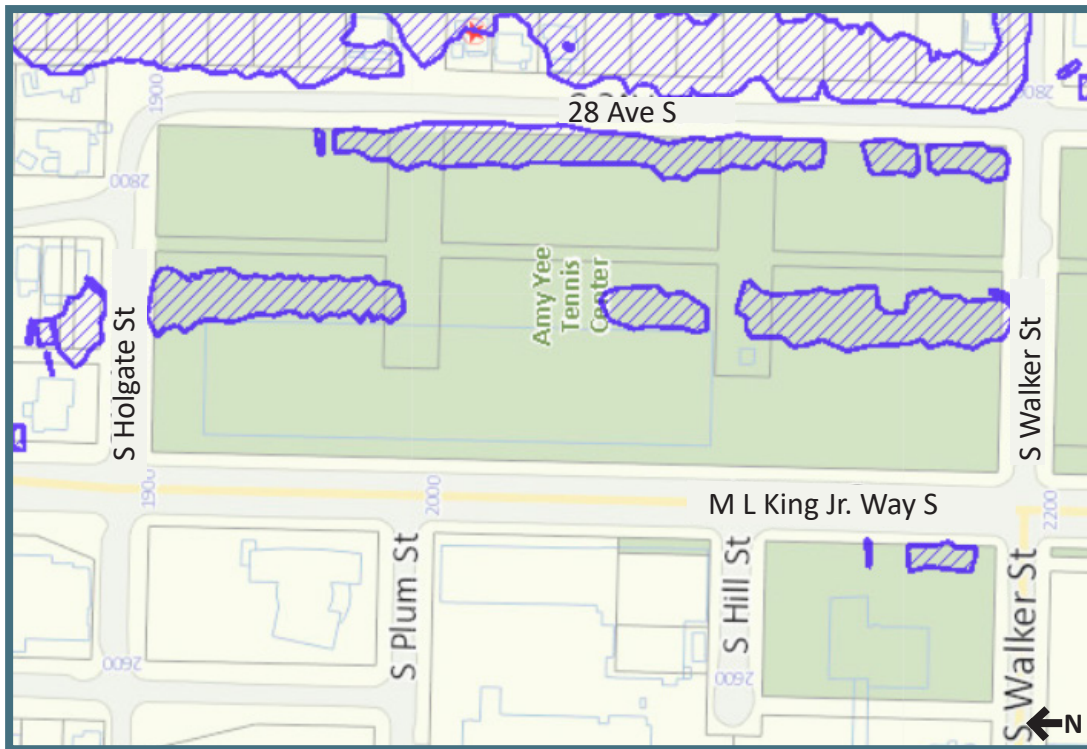


FIGURE 2.3A Existing critical areas on the site

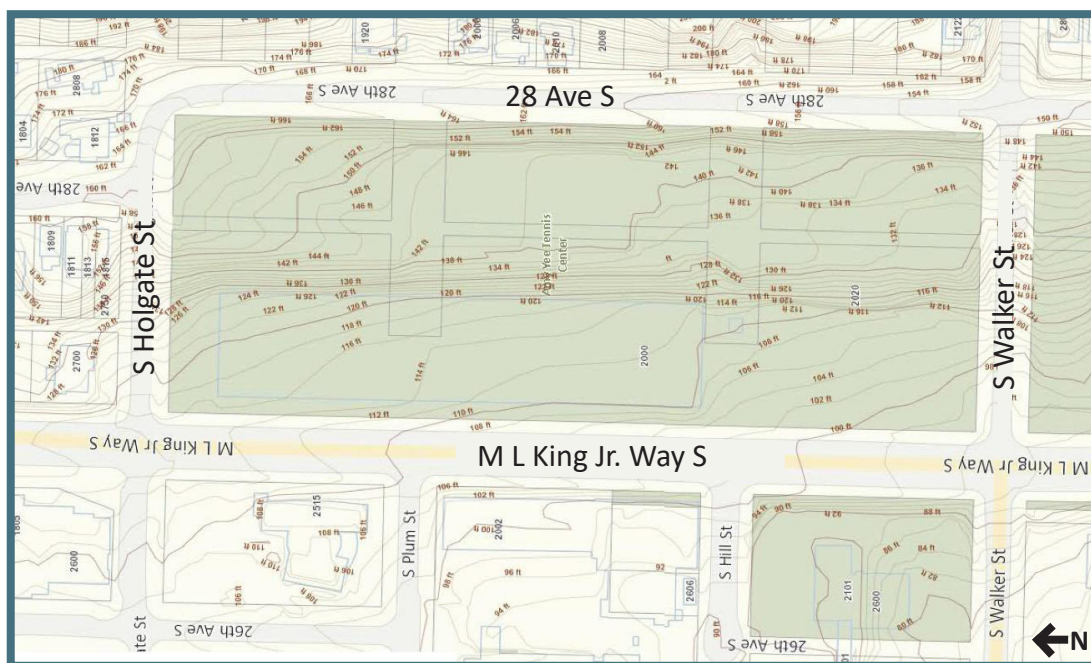


FIGURE 2.3B Existing topography of the site

C. UTILITIES

Water service to the site is provided by existing 8" ductile iron (DI) water mains in Martin Luther King Jr. Way South and 28th Avenue South. Domestic service connection for the new facility will be via the water main in Martin Luther King Jr. Way South. Water pressure in the existing water main is not known at this time, and will require further research.

Three fire hydrants are present on Martin Luther King Jr. Way South and four are available on 28th Avenue South. An additional hydrant will be added at the intersection of South Walker Street and Martin Luther King Jr. Way South, as part of the development in order to meet fire protection requirements. It is anticipated that SPU will require a water main extension of the water main to create a looped water system. The water main extension is shown below in red.



FIGURE 2.4 Water utilities

D. SEWER

The existing facility is serviced by a 10" sewer pipe to the South of the building (shown in green dashed line on figure 2.5 below). The material type is listed as vitrified clay (VC) within the City's GIS information; however, a recent survey indicated that it is a concrete pipe. The depth of the sewer pipe South of the existing facility is approximately 15' deep.

The location of the sewer pipe is within the footprint of the proposed facility; therefore, relocation and upgrade of this sewer line will be required. Due to the depth and location of the existing sewer pipe, the relocation of the sewer main will be challenging.

- a. One option for relocation would be to install a new sewer main from the south side of the existing facility and route it to the west along Hill St to the 30" trunk line located at the cul-de-sac of Hill Street. However, this option is deemed infeasible as the 30" sewer main is brick material which is difficult and risky to connect to. Additionally, construction would impact access to the adjacent businesses due to temporary closure of Hill Street.
- b. A 2nd option would be to install a new gravity side sewer around the West side of the proposed facility. However, due to the depth of the sewer, excavation would have significant impacts on the adjacent areas.
- c. A 3rd and more viable option would be to install a sewer pump at the South side of the existing facility to raise the side sewer to a shallower depth. The side sewer could be routed around the proposed building and reconnect to the existing sewer main at Walker Street. The proposed facility would also connect at Walker Street.

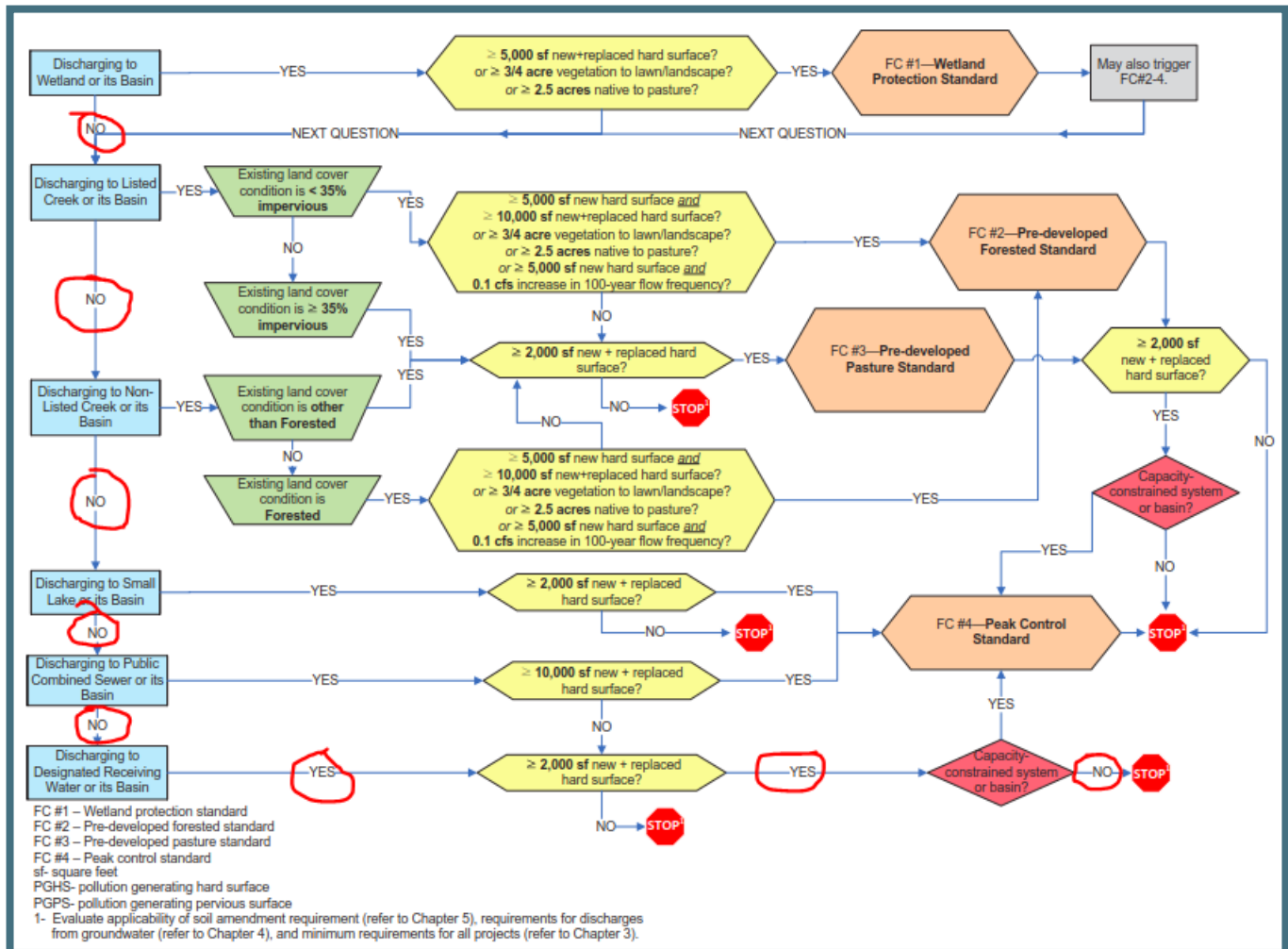


FIGURE 2.5 Sewer utilities

E. STORM WATER

The planned location of the proposed building is within the existing parking lot of the tennis facility. Currently, the parking lot drains to a catch basin located in the Southwest corner of the parking lot, which subsequently drains to the public storm drain system in Martin Luther King Jr. Way South. The eventual outfall for the public storm drain system is the Duwamish Waterway, which is considered a “designated receiving water” per City drainage code. The proposed location for the new parking lot is within the Southeast quarter of the property. This area is vegetated and currently sheet flows down the hill into the existing parking lot.

The proposed facility and associated parking lot will be served by onsite drainage facilities that will outfall to the public storm drain system in Martin Luther King Jr. Way South. The onsite drainage facilities will be in accordance with the City drainage code. As the storm water basin drains to a designated receiving water and the City has indicated that the downstream public storm system is not capacity constrained, flow control measures will not be required (refer to figure 2.6A below). However, water quality measures will be required for the proposed parking lot (refer to figure 2.6B below).



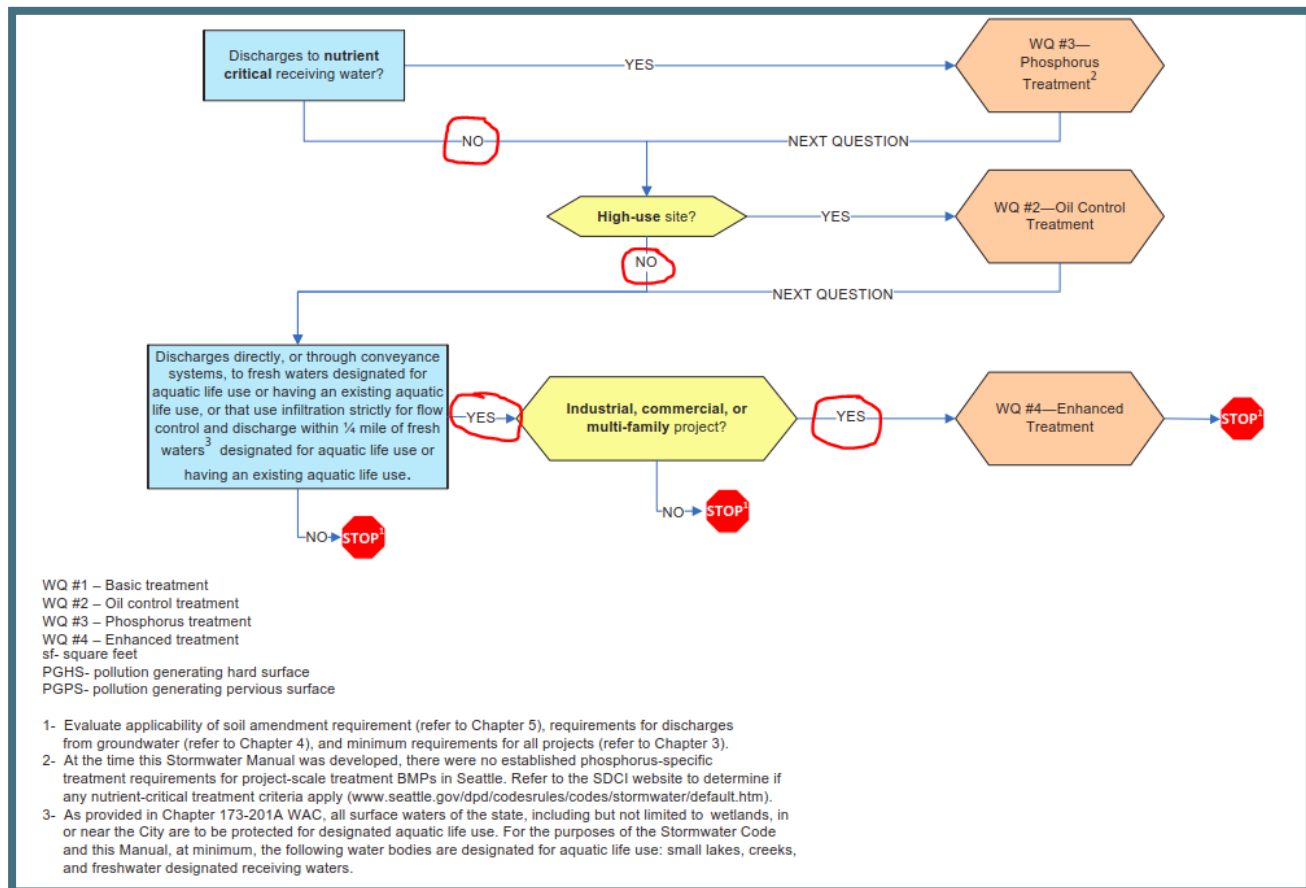


FIGURE 2.6B City of Seattle water quality treatment minimum requirements for parcel-based projects

The site is located in an area designated by the City that does not require an infiltration investigation, as the existing soil is a glacial till material that does not infiltrate. As such, Best Management Practices (BMP's) that utilize infiltration will be deemed infeasible.

Conceptually, there will be two drainage surfaces within the proposed site, the building roof and non-roof areas. In reviewing the available BMP's within the City drainage code related to roof areas, all BMP's have been deemed infeasible. As such, rain leaders for the proposed building will be collected via an onsite drainage system that outfalls to the public storm drain system in Martin Luther King Jr. Way South. The roof area is not a pollutant generating surface; therefore, water quality measures are not required for the roof area.

Non-roof areas are primarily comprised of the proposed parking lot and landscape areas around the site. The parking lot is considered a pollutant generating surface and water quality measures will be required, although flow control will not occur as previously described. In reviewing the available BMP's within the Seattle drainage code related to non-roof areas, a non-infiltrating bioretention facility (NIBF) will be utilized; all other BMP's were deemed infeasible. The approximate size of the bottom area of the NIBF is 2,000 SF; the side slopes of the facility will be 3:1 with a total design depth of 12", including freeboard. The location and geometry of the pond will be determined during design of the proposed facility. A NIBF is considered a low-impact development storm water facility.

The proposed facility and associated parking lot will result in approximately 117,000 SF of disturbed area.

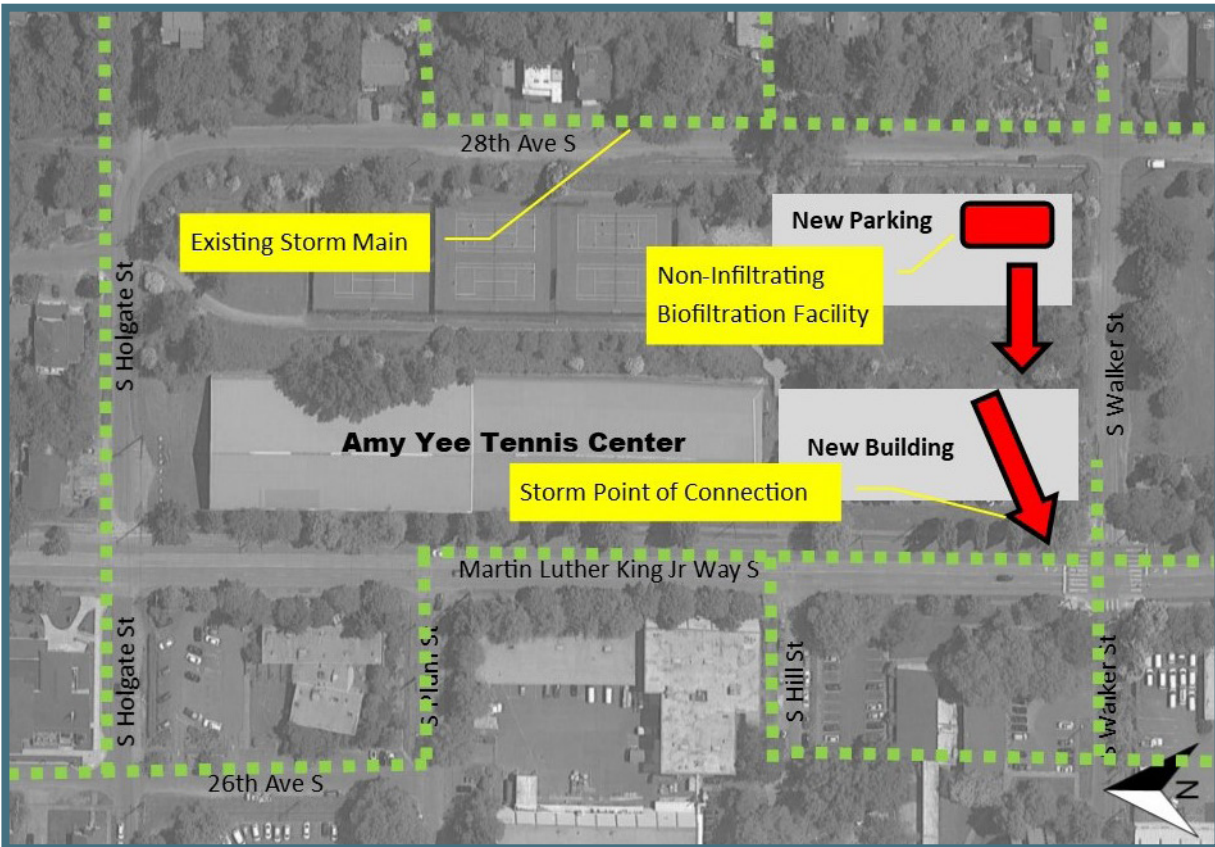


FIGURE 2.7 Storm water utilities

F. TOPOGRAPHY and BOUNDARIES

Existing Site Topography

To understand the current facility layout and proposed facility expansion, it is important to discern the topography and zoning of the existing AYTC.

The existing site has two distinct terraces:

- The lower terrace contains the indoor court facility and parking facility.
- The upper terrace contains six exterior courts.

The steep slope between the upper courts and lower courts has been stabilized with rockeries and sub-drainage systems. The slope above the existing parking lot has not been stabilized and there has been surficial sloughing of soils in this area.

a. Existing Site Boundaries

- The West Boundary is Martin Luther King Jr. Way South

The zoning on the west side of MLK Jr. Way South is light industrial, in keeping with the building vernacular of the existing tennis center. MLK Jr Way South is a major north-south arterial.

- The South Boundary is South Walker Street

Martin Luther King Jr. Memorial Park is located on the South side of South Walker Street.

- The East Boundary is 28th Avenue South

The zoning of the East side of 28th Avenue South is residential.

- The North Boundary is South Holgate Street

The zoning on the North side of South Holgate Street is residential.

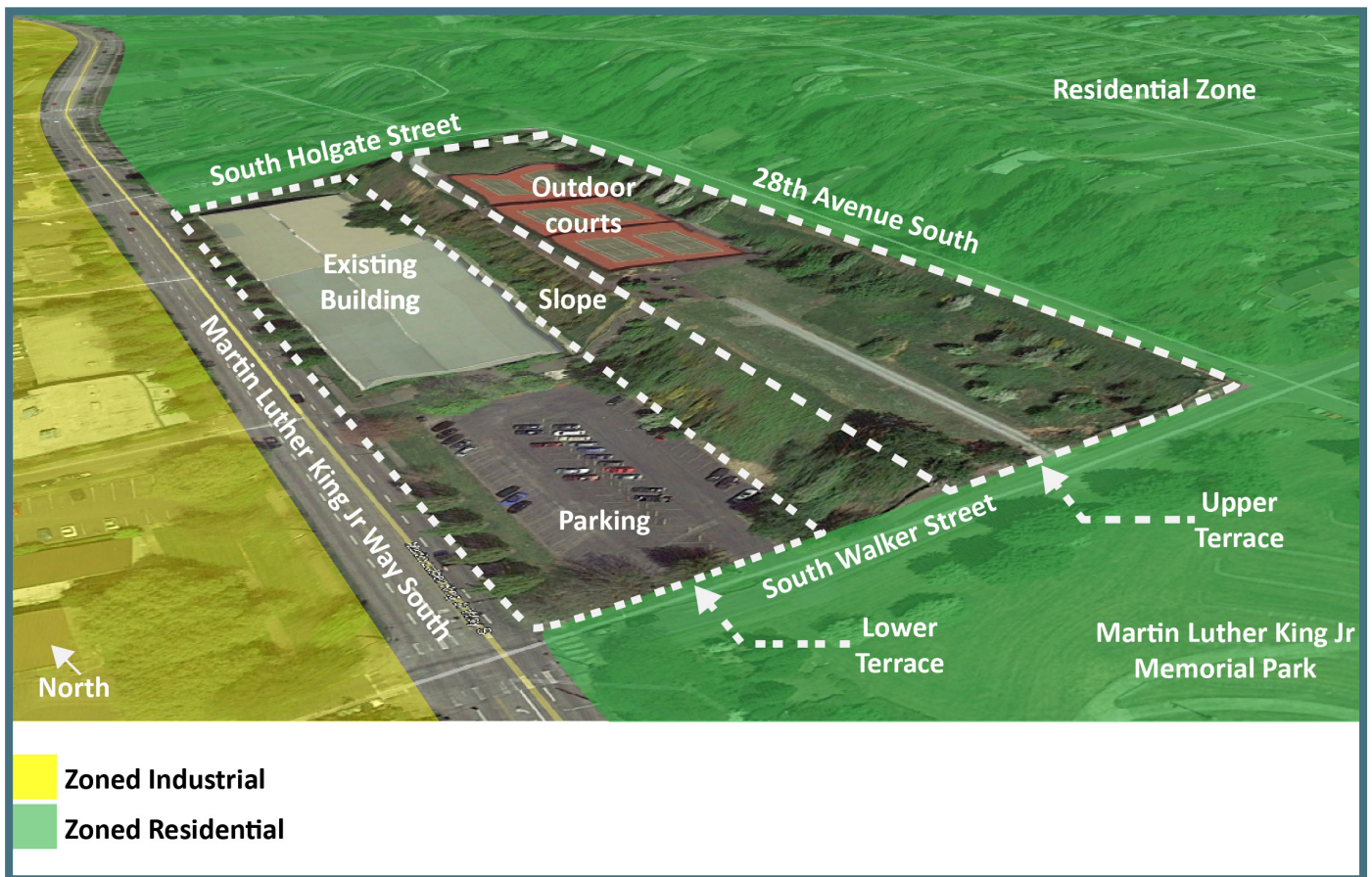


FIGURE 2.8 Existing site context

G. SUSTAINABILITY

The new facility will be designed to Leadership in Energy and Environmental Design (LEED) Gold certified standards and will include a high percentage of recycled materials. The heating system will include high-efficiency heat pumps and no fossil fuels will be used for any tennis center function. The roof framing system will be designed to accept solar mirror arrays on the West facing side of the pitched roof, for maximum solar collection.

a. Sustainable Site Features

- The asphalt used in paving the parking area will include, in part, recycled asphalt material and/or recycled asphalt shingles.
- Storm water mitigation for the parking area will utilize a Low Impact Development (LID) biofiltration facility that will provide water quality for the pollutant generating surfaces, prior to discharge to the public storm drain system.
- Amended soils will be utilized in onsite landscape areas, which will include either stockpiled onsite topsoil or imported top soil that meets amended soil parameters.
- Vegetation along 28th Avenue South will be retained to the maximum extent feasible for construction of the parking lot.
- Landscape trees will be incorporated into the parking lot to provide shade over the asphalt, thus reducing the heat island effect of storm water runoff.

b. Transit Accessibility

Multi-modal transportation options are available to all patrons of AYTC, including vehicle, bike, walking, and transit. The facility is located along Martin Luther King Jr. Way, which has all day bus service nearby (arriving every 15 minutes) from the #4, #7, #8, #9, #14, and #48 bus routes.

Just as Seattle has seen continued growth in the Rainier Valley, the area surrounding AYTC is expecting concentrated growth, in part due to planned transportation and housing developments. Recent Sound Transit Link Extensions have generated growth in areas accessible to the planned stations, and with Sound Transit's Judkins Park Station opening in 2023 at 23rd Avenue South, AYTC will be an easily accessible tennis center within walking distance. As the City plans to develop urban villages across the city over the next 20 years, including at the future Judkins Park Station, AYTC will be positioned to serve this growth. There is an existing Neighborhood Greenway pedestrian and bicycle connection from the future Judkins Station to the tennis center.

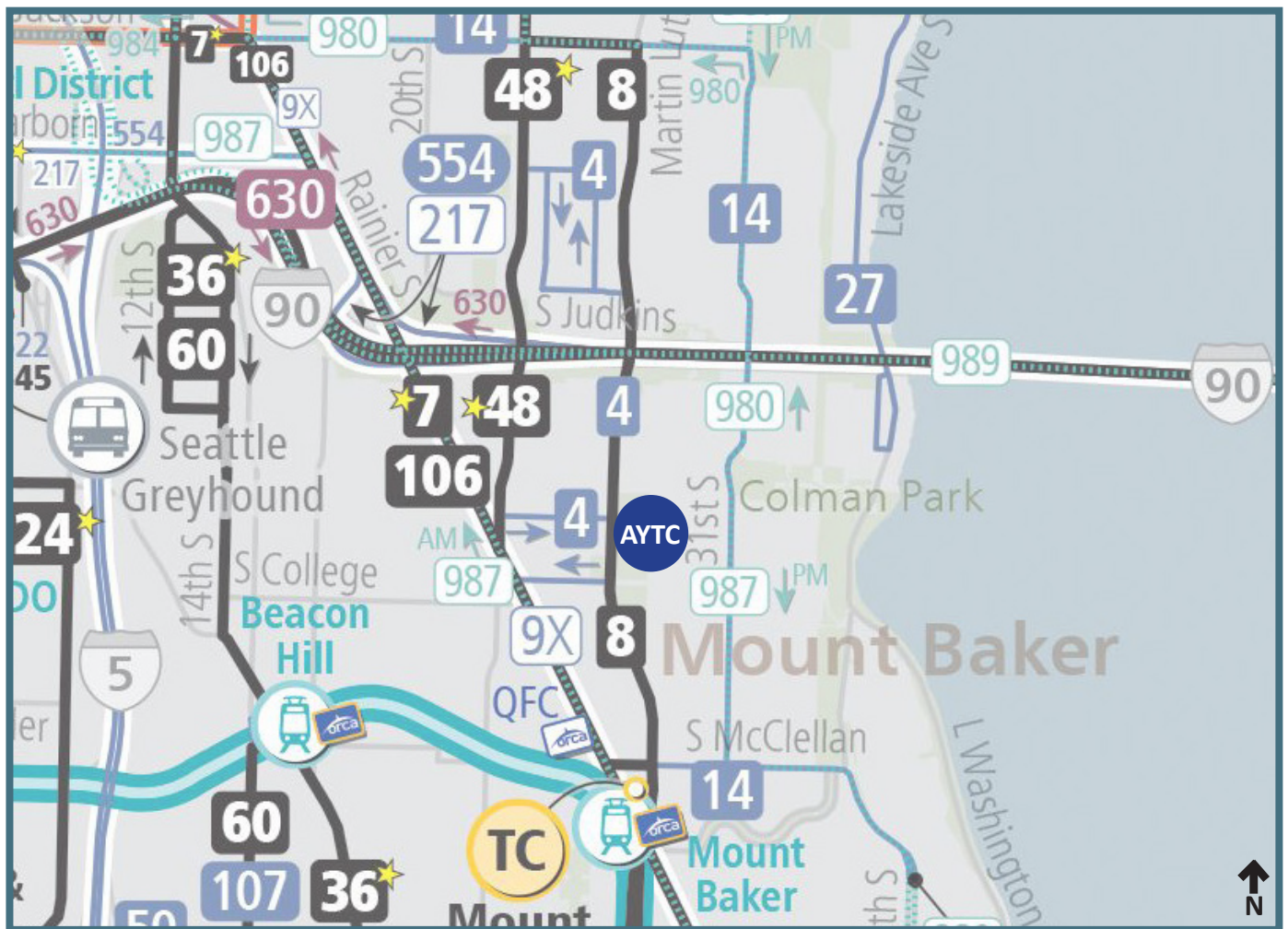


FIGURE 2.9 Nearby transit options

c. Geographic Advantages

Tournaments and organized match-play activities throughout the greater Seattle area are often scheduled at the Jupiter Tennis Center in Edgewood or the Robinswood Tennis Center in Bellevue due to AYTC's lack of available courts. However, AYTC is centrally located and therefore, is the most logical, sustainable location to host these events.

SECTION 3:

Existing Building/Facility Repairs

SECTION 3: EXISTING BUILDING/FACILITY REPAIRS

A. COURT SIZING and SURFACING

The 10-court indoor tennis facility appears to meet the needs of the tennis community. The courts themselves do not meet all the USTA standards as there are differing standards based on level of competition. However, there have been no citations or complaints from the general public or from teams using the facility for competitions. The circulation routes to the courts work well and players on the courts are not disturbed by other competitors passing through to their respective, reserved courts. The surfacing on the courts are in excellent condition and the curtain/netting works to contain balls in the court of play, allowing minimum disturbance between the courts.

a. Recommendation

The design team does not have any recommendations pertaining to court sizing or surfacing aside from ensuring that court surfacing is adequately protected during construction activities.

B. STRUCTURE

AYTC is a pre-engineered metal building fabricated by the Stran Company, which is no longer in business. The structure was designed to the 1973 or 1976 Uniform Building Code (UBC). While there are partial as-builts available, there are no complete as-built drawings available for the entire structural system and much of the engineering developed by pre-engineered metal buildings is proprietary. The design team did contact the company that bought out the Stran Company to see if engineering data was available, but our efforts were unsuccessful. This is significant because it is not possible for a structural engineering firm to provide a structural analysis of a building without first having as-builts for each framing member and structural connection, a costly and time-consuming effort. All design team recommendations have been evaluated to minimize increases to the gravity and lateral loads placed on the structural system in order to avoid having to field document the building structure. Additionally, our team will classify structural improvements as voluntary measures.

a. Recommendation

It is our recommendation to modify the existing tension rod cross beams in order to increase structural capacity of the lateral support system. This work would include increasing the size of the tension rods and upgrading the connections. There are 8 locations in total.

C. ROOFING



FIGURE 3.1 Existing tension rods

The existing roof is 26-gauge prefinished metal roofing panel. The roofing panel, which is an integral part of the pre-engineered metal building structural system, dates to the original construction and is beyond its service life.

The existing structure is a pre-engineered metal building designed to the 1973/1976 UBC with typical metal building design loads. Because the sizes of the structural members are not indicated in the record drawings and not available from the building manufacturer, imposed loads must not exceed those allowed by the existing City building code - 5% for gravity or 10% for seismic mass. This limits the weight for a new roofing system to 1.2 LBS/SF.

a. Recommendation

It is our recommendation to install a new banded, thermal liner assembly directly under the existing roofing and to install a new décor style 60-mil PVC roofing membrane over the existing metal roof panels.

Material	R-value	Weight
New banded thermal liner assembly	R-30	.30 LBS/SF
Existing banded thermal liner assembly	R-7	assumed w/original construction
Existing metal deck	0	assumed w/original construction
XPS flute filler insulation set in adhesive	R-4.2	.15 LBS/SF
½" high density coverboard adhered	R-2.5	.34 LBS/SF
.060 PVC adhered	0	.40 LBS/SF
Totals	43.7	1.19 LBS/SF

FIGURE 3.2 Recommended roofing assembly

The existing lighting does not meet USTA standards, but it appears to be adequate for community play and for the competitions and events held at the facility. The existing light fixtures are fluorescent with non-energy conserving ballasts. Replacement of the lamps with new LED lamps is not feasible; the lamps would need to provide 360 degrees of light and currently only 300 degree LED lamps are available in a format to retrofit the existing fixtures.

a. Recommendation

The design team recommends replacing all of the existing fixtures with new LED fixtures. We anticipate that replacing the existing light fixtures with new LED fixtures will improve the lighting significantly. No further lighting improvements are included with the feasibility study recommendations.



FIGURE 3.2 Existing fluorescent light fixtures

E. HEATING and VENTILATION

The administration area and toilet rooms are heated with an electric heat pump. The comfort level in these spaces appears to be adequate. No changes are recommended for these areas.

The indoor courts are heated with overhead, radiant electric heaters that provide inadequate heat. The radiant heaters, which are placed behind the baseline of the courts, only provide heat if players are directly under or near the heat source. If players stand just several feet away from the heaters, they are not adequately heated. For this reason, this type of heating system is rarely used. When these heaters are used, they have no effect on the ambient air temperature in the court areas. Therefore, the courts are uncomfortably cold during the winter months.

It is important to note that improving the heating for these courts was expressed as the most important goal by the AYTC user committee. However, a new heating system for the existing AYTC indoor court facility is deferred until the

existing building is brought to compliance with the City's energy code, per the request of the City of Seattle Department of Environment and Sustainability. This department has also requested an electric heating system as part of the City's commitment to eliminate use of fossil fuel heating sources by the year 2050.

a. Recommendation

In compliance with the Department of Environment and Sustainability, we are proposing an electric heat pump system in conjunction with destratification fans. One of the challenges of the heating system is to provide heat to all court areas throughout the facility. Due to the perimeter curtains that separate the courts from building circulation and due to the hillside on the East side of the facility, it is not feasible to mount the heat pumps along the building perimeter. The only possible location is to mount the heat pumps on the roof.

The existing pre-engineered steel building was not designed for roof-top-mounted equipment; however, there is structural capacity if the heat pumps are mounted directly over the major girders and the equipment is placed nearer to the building perimeter (as close to the columns as feasible).

The heat pumps (3 - 5 tons) that we recommend, will provide heating and economizer cooling at the East and West ends of the structural bays. This system would provide both heating and ventilation for the volume of the courts and mezzanine. The system will be sized to heat the facility to about 59 Fahrenheit (F) range, and we estimate that about 16 units will be required in total to satisfy the heating load. The system includes supply air from each heat pump getting discharged horizontally into the space through short lengths of ductwork with long-throw diffusers and return air entering at the bottom of every heat pump from a ducted return opening covered by a grille. We also propose that destratification fans be included in the courts to create a more uniform temperature throughout the space. Destratification fans will provide more efficient utilization of heating by redistributing warm air collected in high-bay areas. The heat pumps can be designed to be controlled by local electronic thermostats with economizer sub-bases, or by the city-standard Siemens DDC systems. The destratification fans can be designed to be controlled with time switches or on/off switches.

F. WATER INTRUSION

There is currently water infiltrating into the tennis center along the east elevation retaining wall. The infiltration is being addressed with storm water repairs and injection grouting. This work will occur with the first phase of construction.

SECTION 4: PHASING and COSTS

SECTION 4:

Phasing and Costs

Vital to project planning, is properly defining the project parameters and the way in which each parameter will affect the overall project. The following are important parameters for this project:

- a. The existing indoor tennis court facility is approximately 65,000 SF and contains 10 tennis courts (on two levels) as well as administration offices and locker rooms.
- b. The existing building consists of “pre-engineered” steel, constructed in two phases extending from 1976-1977. All work was built to codes in place at the time.
- c. The existing building contains no fire sprinkler system.
- d. A new tennis facility is proposed adjacent to the existing tennis facility so that AYTC would be able to continue tennis operations during the construction of the new facility. The new building is proposed on the existing building parking lot; the upper parking area would have to be developed in advance of the construction of the new facility. Other than the impact on parking noted above, the construction of the new facility could occur as soon as funding for the new facility was available. In other words, the improvements to the existing facility and the construction of a new facility are not causally linked. It may be advantageous to build the new facility in advance of undertaking the existing facility improvements so that tennis play could occur in the new facility while the existing facility is being renovated.

A. REPLACEMENT vs. RETROFIT OF EXISTING BUILDING

The estimated project cost for a 10-court replacement building is \$32,500,000 (estimated at \$500/SF). The estimated project cost for renovation of the existing facility, including administration areas and the mezzanine is \$7,000,000 (\$108/SF).

Given that the primary goal of AYTC customers is to expand the number of indoor tennis courts, we recommend retaining and modernizing the existing facility.

B. PHASING RATIONALE

Project phasing is recommended. The existing building does not conform to existing City of Seattle Building Codes. Under current City codes, the existing building does not require fire sprinklers. However, if the scope of work for the renovation triggers “Substantial Alterations”, the building would need to be upgraded to conform to all City codes in place at the time of the renovation.

Substantial Alterations would require the building to be fire-sprinklered; however, the existing roof structure will not support the added weight of fire suppression sprinklers. In order to avoid a permit classification of Substantial Alterations, the renovation project should be phased, and we recommend three years minimum between each phase.

The phasing recommendation is outlined in figure 4.1. See Section 5, Appendix C.1 through C.5 for cost estimates associated with each of these phases.

Phase	Scope of Work	Schedule/Comments	Estimated Project Costs
Phase A1	- Site ADA - Toilet, Court and Admin Area ADA - Fire Alarm Upgrades - Entry Soffit replacement	Summer/Fall of 2019	2.1 Million
Phase A2	- Over-roof and roof assembly insulation - Voluntary structural upgrades of cross bracing tension rods	- To be determined based on available funding. - Recommend construction not prior to summer/fall of 2022	3.5 Million
Phase A3	- New court area heating & ventilation - Replace court lighting	- To be determined based on available funding - Recommend construction not prior to summer/fall of 2025 (assuming exterior wall insulation has been installed as per the Memorandum of Understanding with the City's Office of Sustainability & Environment)	3 Million
Phase B1	Interior Renovation - Community multipurpose room - Platform lift & egress stairs at mezzanine - Modify administration area for pro shop & viewing area - All-gender toilet/locker room	- To be determined based on available funding - Tenant Improvement work does not affect Substantial Alterations work phasing	1 Million
Phase B2	AYTC Expansion (five court building addition)	- To be determined based on available funding - Recommendation to establish upper parking area prior to construction of new building so that existing facility can be utilized during construction	22.5 Million

Figure 4.1 Recommended phases of work

SECTION 5:

Appendix

SECTION 5: APPENDIX

Appendix A: ENERGY CODE COMPLIANCE CALCULATION FOR EXISTING BUILDING

Appendix B: 2016 SEISMIC REPORT

Appendix C: COST ESTIMATES BY PHASE:

C.1 Phase A1

C.2 Phase A2

C.3 Phase A3

C.4 Phase B1

C.5 Phase B2

Appendix D: WORKS CITED

Appendix E: Proposed new building layout drawings

APPENDIX A:

ENERGY CODE COMPLIANCE CALCULATION FOR EXISTING BUILDING

AMY YEE TENNIS CENTER - INSULATION OPTION TRADE OFF CALCULATIONS

Assumptions:

1. Concrete walls are assumed to be solid non-grouted walls
2. Existing glazing is assumed to be double pane

Base Model - Code Compliant Envelope

ID	Area / Perimeter	Target per SEC 2015		
		R	U/F	UA
Metal panel Wall	22485	19.23	0.052	1169.22
Above grade concrete wall	1680	17.54	0.057	95.76
Below Grade Concrete Wall	4032	14.29	0.07	282.24
Glazing Area	237.5	2.63	0.38	90.25
Doors (Swinging)	154	2.70	0.37	56.98
Doors (Non Swinging)	200	2.94	0.34	68.00
Slab on Grade	1320	1.85	0.54	712.80
Canopy Overhang Area	1020	19.23	0.052	53.04
Roof Area	71565	37.04	0.027	1932.26
Sum of UA & FL =				4460.55

Proposed model (Alternate 1)

ID	Area / Perimeter	Proposed		
		R	U/F	UA
Metal panel Wall	11840	36.60	0.02732	323.47
Metal panel Wall-west	10645	15.00	0.06666667	709.67
Above grade concrete wall	1680	14.29	0.07	117.60
Below Grade Concrete Wall	3202	16.18	0.054	172.91
Below Grade Concrete Wall with no insulation (bottom 15")	830	5.18	0.193	160.19
Glazing Area	237.5	1.25	0.8	190.00
Doors (Swinging)	154	2.70	0.37	56.98
Doors (Non Swinging)	200	2.94	0.34	68.00
Slab on Grade	1320	1.37	0.73	963.60
Canopy Overhang Area	1020	30.00	0.03333333	34.00
Roof Area	71565	44.48	0.02248201	1608.93
Sum of UA & FL=				4405.34

As the Proposed model's Sum of UA & FL value is less than the base model, the proposed model is code compliant.

APPENDIX B:

2016 SEISMIC REPORT

October 31, 2016

**Seismic and Gravity Evaluation
Amy Yee Tennis Center-City of Seattle
2000 Martin Luther King Jr. Way
Seismic Study**

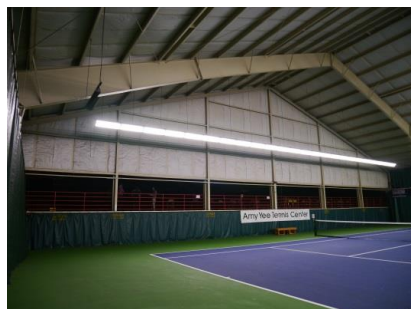
Building Summary	
Stories	1 + Mezzanine at South End
Square footage	67,600 sf
Construction Type	Prefabricated metal building.
Foundation Type	Concrete slab and foundations on grade
Year Constructed	1977 & 1978 addition
Use	Tennis Courts
Performance Level	Life Safety and Collapse Prevention
ASCE 41 Checklists	S3 Steel light frames
Building Code	UBC 1973 or 1976
Potential Deficiencies	• Tension rod capacity • Moment frame connections • Moment frame compactness criteria • Mezzanine lateral
Non-structural issues	Not Reviewed.
Further Analysis and Review	Analyze the building to rectify listed deficiencies.

Summary Seismic Report



The Amy Yee Tennis Center consists of two similar buildings, the first was constructed in 1977 and an addition was constructed in 1978. Together, they cover approximately 67,600 square feet. Both are prefabricated metal buildings that were designed to the 1973 or 1976 Uniform Building Code. The roof structure consists of metal roofing supported by purlins with tension rod bracing acting as a diaphragm. Moment frames resist lateral load in the transverse direction and tension rod braced frames resist lateral load in the

longitudinal direction. Wall construction consists of metal siding with girts spanning between columns. Floor and foundations are concrete on grade with a retaining wall on the east side of the building.



For the seismic part of this study, an ASCE 41-13 Tier 1 checklist has been completed for the Life Safety and Collapse Prevention performance levels as specified in Table 304.4.1 of the 2012 SBC. Currently, the building is used for indoor tennis and the ASCE 41-13 classification is building type S3: steel light frames. The study is based on the original 1977 drawings (drawings for the addition were not available) and a site visit for verification and additional information. Deficiencies are as follows:

- Braced frame tension rod stress exceeds the allowable stress
- Moment frame bolted flange plate connections do not have sufficient capacity to develop elastic moment capacity of the adjoining members
- Moment frame members may not meet compactness requirements (dimensions were not accessible)
- Mezzanine does not have lateral support. See Figure 1 for proposed lateral elements to be added between the mezzanine floor and main floor.

If further analysis is performed, emphasis should be on overall lateral analysis of the building to rectify deficiencies (listed above) in the building.

Summary Gravity Report

For the gravity part of this study, two proposed modifications are addressed. The first is using the mezzanine for a viewing area containing no more than 49 people. Since the original drawings specify a live load of 100 psf, the mezzanine is acceptable for this use. The second is adding new roofing and heating to the main structure moment frames. Additional load from these items must be limited to 5% of the original structure's total gravity load (IBC 3403.3) to prevent reinforcing the existing structure.

This can be accomplished by using additional roofing that does not exceed 1.5 psf and new heaters that do not add more than 500# per transverse moment frame, which are spaced at 30'-0".

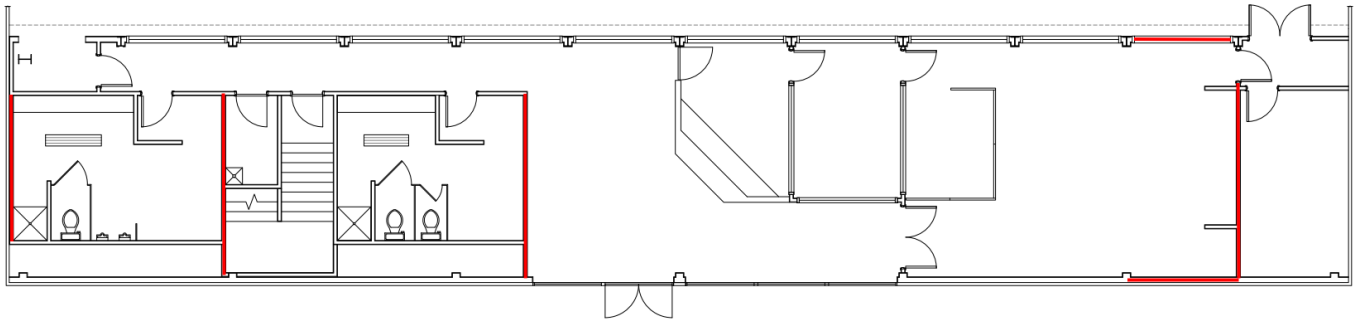
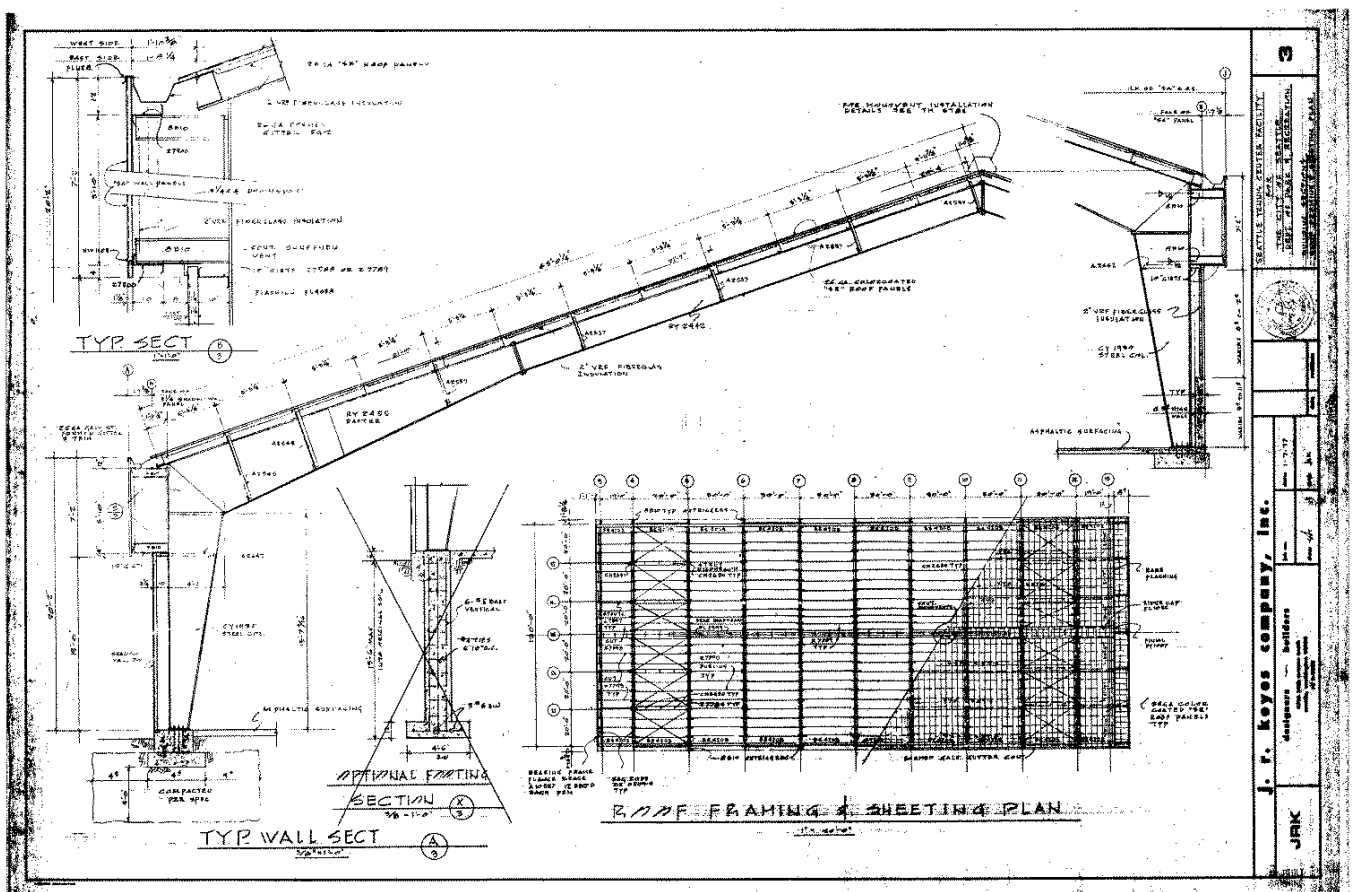


Figure 1. Proposed steel braced frames between mezzanine floor and main floor.



ROOF FRAMING PLAN

APPENDIX C.1: PHASE A1 COST ESTIMATE

Cost estimate summary provided for reference:

Phase	Scope of Work	Schedule/Comments	Estimated Project Costs
PHASE A1 Phase A1	- Site ADA - Toilet, Court and Admin Area ADA - Fire Alarm Upgrades - Entry Soffit replacement	Summer/Fall of 2019	2.1 Million
Phase A2	- Over-roof and roof assembly insulation - Voluntary structural upgrades of cross bracing tension rods	- To be determined based on available funding. - Recommend construction not prior to summer/fall of 2022	3.5 Million
Phase A3	- New court area heating & ventilation - Replace court lighting	- To be determined based on available funding - Recommend construction not prior to summer/fall of 2025 (assuming exterior wall insulation has been installed as per the Memorandum of Understanding with the City's Office of Sustainability & Environment)	3 Million
Phase B1	Interior Renovation - Community multipurpose room - Platform lift & egress stairs at mezzanine - Modify administration area for pro shop & viewing area - All-gender toilet/locker room	- To be determined based on available funding - Tenant Improvement work does not affect Substantial Alterations work phasing	1 Million
Phase B2	AYTC Expansion (five court building addition)	- To be determined based on available funding - Recommendation to establish upper parking area prior to construction of new building so that existing facility can be utilized during construction	22.5 Million

PHASE A1 - ADA / INUSLATON / FIRE ALARM

AMY YEE TENNIS CENTER FACILITY IMPROVEMENTS

SUMMARY OF WORK COST ESTIMATE

May 8, 2019

Item				
Exterior grading and paving				\$349,056
Toilet Room and Court Accessibility				\$171,826
Fire alarm upgrades				\$192,306
Soffit Repairs				\$17,250
Subtotals				\$730,439
GC General Conditions 16.00%				\$116,870
Subtotal				\$847,309
General Contractor Profit 8.00%				\$67,785
Subtotal				\$915,093
Bond and Insurance 2.50%				\$22,877.33
Subtotal				\$937,971
Design Contingency 5.00%				\$46,898.53
Estimated Base Bid Construction Costs				\$984,869
Estimated Additive Costs				\$314,471
Total Estimated Construction Costs				\$1,299,340
<u>Soft Cost Summary</u>				
Sales Tax				
Permitting				
Testing				
Construction Contingency				
Design Services Contingency				
Project Management				
Estimated Soft Costs 60.00%				\$779,604
Total Estimated Project Costs				\$2,078,944
TOTAL ESTIMATED PROJECT COSTS (ROUNDED)				\$2,100,000
Additives	Base cost	GC mark-ups	Cost	Total Cost
Additive 1 Site Lighting	\$26,998	16.00%	\$4,320	\$31,317
Additive 2 Exterior Insulation				\$283,154
R-30 Insulation/Liner	\$180,498	16.00%	\$28,880	\$209,378
R-11 XPS Insulating/Liner	\$42,600	16.00%	\$6,816	\$49,416
Injection Grouting	210	lf	\$116	\$24,360

PROJECT : Amy Yee Tennis Center Facility Improvements
LOCATION : Exterior grading and paving (ADA Site: ADA Parking and Plaza Access)
DATE: May 8, 2019
EXIST SF : 64,870 sf
EST TYPE : Feasibility study

Description	Quantity		Unit cost	Total
RE civil estimate	1	ls	201,174	\$322,610
Sub Overhead and Profit (included above)	1	ls	26,446	\$26,446
SUB- TOTAL				\$349,056

PROJECT : Amy Yee Tennis Center Facility Improvements
LOCATION : Toilet Room and Court Accessibility
DATE: May 8, 2019
EXIST SF : 64,870 sf
EST TYPE : Feasibility study

Description	Quantity		Price		Total
Demo ceilings	150	sf	2.25	\$338	
Demo toilet stalls	3	ea	75.00	\$225	
Demo vinyl flooring	423	sf	2.50	\$1,058	
Demo GWB walls	500	sf	2.50	\$1,250	
Demo shower stalls	2	ea	250.00	\$500	
Demo concrete slab	50	sf	10.00	\$500	
Demo window	1	ea	250.00	\$250	\$4,120
Finishes					
New concrete slab	50	sf	7.00	\$350	
New CT floor finish	500	ea	12.00	\$6,000	
New ceramic tile base	135	lf	13.00	\$1,755	
New GWB walls	500	sf	12.00	\$6,000	
New CT wall finishes	260	sf	12.00	\$3,120	
New PVC wainscot	130	sf	4.00	\$520	
Patch GWB ceilings	150	sf	15.00	\$2,250	
Countertops	8	lf	225.00	\$1,800	
Painting - walls	1,060	sf	2.25	\$2,385	
Painting - ceiling	460	sf	2.25	\$1,035	
Tennis Court wall impact panel	20	sf	10.00	\$200	\$25,415
Openings					
Door, frame, and hardware	1	ls	2,000.00	\$2,000	
Aluminum window frame	1	ls	1,000.00	\$1,000	
Impact resistant glazing	40	sf	50.00	\$2,000	\$5,000
Furnishings					
Partition stall	3	ea	1,550.00	\$4,650	
Urinal screen	1	ea	500.00	\$500	
Install toilet partitions	12	hrs	65.00	\$780	
Electric hand dryer	2	ea	1,500.00	\$3,000	
Accessories	2	ls	800.00	\$1,600	
Accessible lockers	2	ea	500.00	\$1,000	\$11,530
Mechanical					
RE mech estimate	1	ls	46,290.00	\$46,290	\$46,290
Electrical					
RE elec estimate	1	ls	45,106.00	\$45,106	\$45,106
SUB- TOTAL					\$171,826

PROJECT : Amy Yee Tennis Center Facility Improvements
 LOCATION : Fire Alarm Upgrades
 DATE: May 8, 2019
 EXIST SF : 64, 870 sf
 EST TYPE : Feasibility study

Description	Quantity		Unit cost	Total
RE elec estimate	1	ls	192,306	\$192,306
Sub Overhead and Profit (included above)	1	%	0.00%	\$0
SUB- TOTAL				\$192,306

PROJECT : Amy Yee Tennis Center Facility Improvements
LOCATION : Soffit repairs
DATE: May 8, 2019
EXIST SF : 64,870 sf
EST TYPE : Feasibility study

Description	Quantity	Unit Cost	Cost	Total
Demolition				
Demo exterior gyp. bd. soffit	0 sf	\$1.25	\$0	
Demo flashing and trim	0 lf	\$2.25	\$0	\$0
Finishes				
self-adhereing bituminous membrane	1,000 sf	\$2.00	\$2,000	
Metal soffit panel	1,000 sf	\$8.00	\$8,000	
Flashing and trim	150 sf	\$18.00	\$2,700	
Exterior grille	1 ea	\$300.00	\$300	
Repair soffit insulation	0 ls	\$500.00	\$0	\$13,000
Mechanical	0 ls	\$0.00	\$0	\$0
RE mech estimate				
Electrical				
New soffit lights	10 ea	\$425.00	\$4,250	\$4,250
SUB- TOTAL				\$17,250

PROJECT : Amy Yee Tennis Center Facility Improvements
 LOCATION : Site Lighting
 DATE: May 8, 2019
 EXIST SF : 64,870 sf
 EST TYPE : Feasibility study

Description	Quantity		Unit cost	Total
RE elec estimate	1	ls	26,998	\$26,998
Sub Overhead and Profit (included above)	1	%	0.00%	\$0
SUB- TOTAL				\$26,998

PROJECT : Amy Yee Tennis Center Facility Improvements
 LOCATION : R-30 Insulation/Liner
 DATE: May 8, 2019
 EXIST SF : 64,870 sf
 EST TYPE : Feasibility study

Description	Quantity	Unit Cost	Cost	Total
Demolition				
R-30 retro fit assembly to upper fascia	18,356 sf	\$8.00	\$146,848	\$180,498
R-30 soffit retro fit insulation assembly	2,065 sf	\$10.00	\$20,650	
Add insulation at metal soffit	1,000 sf	\$8.00	\$8,000	
Relocate light fixtures on east elevation	20 ea	\$200.00	\$4,000	
Demo bracket and chain serving ridge vent on east elev	4 ea	\$250.00	\$1,000	
SUB- TOTAL				\$180,498

PROJECT : Amy Yee Tennis Center Facility Improvements
LOCATION : R-11 XPS Insulating/Liner (exterior retaining wall insulation)
DATE: May 8, 2019
EXIST SF : 64,870 sf
EST TYPE : Feasibility study

Description	Quantity	Unit Cost	Cost	Total
Demolition				
Pinned insulation assembly with liner	4,260 sf	\$10.00	\$42,600	\$42,600
SUB- TOTAL				\$42,600

APPENDIX C.2: PHASE A2 COST ESTIMATE

Cost estimate summary provided for reference:

Phase	Scope of Work	Schedule/Comments	Estimated Project Costs
Phase A1	- Site ADA - Toilet, Court and Admin Area ADA - Fire Alarm Upgrades - Entry Soffit replacement	Summer/Fall of 2019	2.1 Million
PHASE A2 Phase A2	- Over-roof and roof assembly insulation - Voluntary structural upgrades of cross bracing tension rods	- To be determined based on available funding. - Recommend construction not prior to summer/fall of 2022	3.5 Million
Phase A3	- New court area heating & ventilation - Replace court lighting	- To be determined based on available funding - Recommend construction not prior to summer/fall of 2025 (assuming exterior wall insulation has been installed as per the Memorandum of Understanding with the City's Office of Sustainability & Environment)	3 Million
Phase B1	Interior Renovation - Community multipurpose room - Platform lift & egress stairs at mezzanine - Modify administration area for pro shop & viewing area - All-gender toilet/locker room	- To be determined based on available funding - Tenant Improvement work does not affect Substantial Alterations work phasing	1 Million
Phase B2	AYTC Expansion (five court building addition)	- To be determined based on available funding - Recommendation to establish upper parking area prior to construction of new building so that existing facility can be utilized during construction	22.5 Million

PHASE A2 - NEW ROOF / ADDED ROOF INSULATION / TENSION RODS

AMY YEE TENNIS CENTER FACILITY IMPROVEMENTS

SUMMARY OF WORK COST ESTIMATE

May 8, 2019

Item		
New Roof and Added Roof Insulation		\$1,247,980
Upgrade Perimeter Wall Tension Rod Assemblies		\$390,400
Subtotals		\$1,638,380
GC General Conditions	16.00%	\$262,141
Subtotal		\$1,900,521
General Contractor Profit	8.00%	\$152,042
Subtotal		\$2,052,562
Bond and Insurance	2.50%	\$51,314.06
Subtotal		\$2,103,877
Design Contingency	3.00%	\$63,116.30
Estimated Base Bid Construction Costs		\$2,166,993
Total Estimated Construction Costs		\$2,166,993
<u>Soft Cost Summary</u>		
Sales Tax		
Permitting		
Testing		
Construction Contingency		
Design Services Contingency		
Project Management		
Estimated Soft Costs	60.00%	\$1,300,196
Total Estimated Project Costs		\$3,467,189
TOTAL ESTIMATED PROJECT COSTS (ROUNDED)		\$3,500,000

PROJECT: AYTC Feasibility Study
DESCRIPTION: New Roof and Added Roof Insulation
DATE: May 8, 2019
EXIST SF : 70,030
EST LEVEL: Feasibility study

Description	Quantity	Unit Cost	Cost	Total
R-30 retro fit banded insulated liner system	70,030 sf	\$7.50	\$525,225	
XPS 1" flute filler insulation (R 4.2)	70,030 sf	\$2.00	\$140,060	
1/2" compressed polyiso coverboard (R 2.5)	70,030 sf	\$2.00	\$140,060	
60 mil décor PVC	70,030 sf	\$4.50	\$315,135	
Perimeter flashings	1,600 lf	\$20.00	\$32,000	
Modify ridge vent	800 lf	\$20.00	\$16,000	
Fall protection anchors	35 ea	\$1,800.00	\$63,000	
Horizontal life lines	1,100 lf	\$15.00	\$16,500	
Subtotal Roof and Insulation				\$1,247,980

PROJECT: AYTC Feasibility Study
DESCRIPTION: Upgrade Perimeter Wall Tension Rod Assemblies
DATE: May 8, 2019
EST LEVEL: Feasibility study

Description	Quantity	Unit Cost	Cost	Total
Cost per Bay				
Remove existing rods and connections	1 ls	\$500	\$500	
New tension rods	2 ea	\$800	\$1,600	
New connections	5 ea	\$800	\$4,000	
Subtotal (1 Bay)				\$6,100
Sub-total 8 Bays		8 ea	\$48,800	\$390,400

PHASE A2

APPENDIX C.3: PHASE A3 COST ESTIMATE

Cost estimate summary provided for reference:

Phase	Scope of Work	Schedule/Comments	Estimated Project Costs
Phase A1	- Site ADA - Toilet, Court and Admin Area ADA - Fire Alarm Upgrades - Entry Soffit replacement	Summer/Fall of 2019	2.1 Million
Phase A2	- Over-roof and roof assembly insulation - Voluntary structural upgrades of cross bracing tension rods	- To be determined based on available funding. - Recommend construction not prior to summer/fall of 2022	3.5 Million
PHASE A3 Phase A3	- New court area heating & ventilation - Replace court lighting	- To be determined based on available funding - Recommend construction not prior to summer/fall of 2025 (assuming exterior wall insulation has been installed as per the Memorandum of Understanding with the City's Office of Sustainability & Environment)	3 Million
Phase B1	Interior Renovation - Community multipurpose room - Platform lift & egress stairs at mezzanine - Modify administration area for pro shop & viewing area - All-gender toilet/locker room	- To be determined based on available funding - Tenant Improvement work does not affect Substantial Alterations work phasing	1 Million
Phase B2	AYTC Expansion (five court building addition)	- To be determined based on available funding - Recommendation to establish upper parking area prior to construction of new building so that existing facility can be utilized during construction	22.5 Million

PHASE A3 - HEATING & VENTILATION / COURT LIGHTING

AMY YEE TENNIS CENTER FACILITY IMPROVEMENTS

SUMMARY OF WORK COST ESTIMATE

May 8, 2019

Item		
Heating and Ventilation Systems		\$1,101,510
Replace court lighting fixtures		\$208,200
Subtotals		\$1,309,710
GC General Conditions	16.00%	\$209,554
Subtotal		\$1,519,264
General Contractor Profit	8.00%	\$121,541
Subtotal		\$1,640,805
Bond and Insurance	2.50%	\$41,020.12
Subtotal		\$1,681,825
Design Contingency	5.00%	\$84,091.24
Estimated Base Bid Construction Costs		\$1,765,916
Total Estimated Construction Costs		\$1,765,916
Soft Cost Summary		
Sales Tax		
Permitting		
Testing		
Construction Contingency		
Design Services Contingency		
Project Management		
Estimated Soft Costs	60.00%	\$1,059,550
Total Estimated Project Costs		\$2,825,466
TOTAL ESTIMATED PROJECT COSTS (ROUNDED)		\$3,000,000

PHASE A3

PROJECT: AYTC Feasibility Study
DESCRIPTION: Heating and Ventilation Systems
DATE: May 8, 2019
EXIST SF : 70,030
EST LEVEL: Feasibility study

Description	Quantity	Unit Cost	Cost	Total
Mechanical estimate (refer to inset estimate)			\$911,010	

Category	Count		Material	Labor		Total
Mobilization						
Mech. General Conditions (submittals, admin	1	L.S.	-	-	\$	20,000
Demolition						
Equipment Removal and Disposal	1	L.S.	-	-	\$	5,000
HVAC						
Heat Pumps	16	Ea	\$8,000.00	\$8,000.00	\$	256,000
Roof Curbs	16	Ea	\$2,000.00	\$1,500.00	\$	56,000
Destratification fan and control	4	Ea	\$5,500.00	\$2,000.00	\$	30,000
GRD	96	Ea	\$125.00	\$100.00	\$	21,600
General Ductwork (supply, return, exhaust)	11213	lb	\$4.00	\$6.00	\$	112,130
Ductwork support	1	L.S.	-	-	\$	56,065
Insulation	1500	SF	\$0.50	\$2.30	\$	4,200
Exhaust Fan, Damper and Fan accessories	1	SF	\$6,250.00	\$2,500.00	\$	8,750
TAB						
Test, Adjust, Balance	1	LS	-	-	\$	25,000
Controls						
Temperature control - Seimens Controls	60900	SF	-	\$2.70	\$	164,430
Total					\$	759,175
Mechanical Contractor OH&P (20%)					\$	151,835
Total					\$	\$911,010

New electrical service	1 sf	\$50,000.00	\$50,000
Extend power to Heat pumps and fans	21 sf	\$1,500.00	\$31,500
Heat pump work access platforms	16 ea	\$4,500.00	\$72,000
Misc steel structure modifications	16 ea	\$1,500.00	\$24,000
Crane rental (2 picks)	2 ea	\$6,500.00	\$13,000

Subtotal Heating and Ventilation Upgrades **\$1,101,510**

Estimated Cost/SF \$15.73

PROJECT: AYTC Feasibility Study
DESCRIPTION: Replace court lighting fixtures
DATE: May 8, 2019
EST LEVEL: Feasibility study

Description	Quantity	Unit Cost	Cost	Total
Remove/dispose existing lighting	1 ls	\$3,000	\$3,000	
Lower court lighting	1 ls	\$102,600	\$102,600	
Upper court lighting	1 ls	\$102,600	\$102,600	
Subtotal				\$208,200

APPENDIX C.4: PHASE B1 COST ESTIMATE

Cost estimate summary provided for reference:

Phase	Scope of Work	Schedule/Comments	Estimated Project Costs
Phase A1	- Site ADA - Toilet, Court and Admin Area ADA - Fire Alarm Upgrades - Entry Soffit replacement	Summer/Fall of 2019	2.1 Million
Phase A2	- Over-roof and roof assembly insulation - Voluntary structural upgrades of cross bracing tension rods	- To be determined based on available funding. - Recommend construction not prior to summer/fall of 2022	3.5 Million
Phase A3	- New court area heating & ventilation - Replace court lighting	- To be determined based on available funding - Recommend construction not prior to summer/fall of 2025 (assuming exterior wall insulation has been installed as per the Memorandum of Understanding with the City's Office of Sustainability & Environment)	3 Million
Phase B1	Interior Renovation - Community multipurpose room - Platform lift & egress stairs at mezzanine - Modify administration area for pro shop & viewing area - All-gender toilet/locker room	- To be determined based on available funding - Tenant Improvement work does not affect Substantial Alterations work phasing	1 Million
Phase B2	AYTC Expansion (five court building addition)	- To be determined based on available funding - Recommendation to establish upper parking area prior to construction of new building so that existing facility can be utilized during construction	22.5 Million

PHASE B1 - RECONFIGURE EXISTING ADMIN AREA & MEZZANINE

AMY YEE TENNIS CENTER FACILITY IMPROVEMENTS

SUMMARY OF WORK COST ESTIMATE

May 8, 2019

Item		
Subtotal Construction Costs		\$417,240
GC General Conditions	16.00%	\$66,758
Subtotal		\$483,998
General Contractor Profit	8.00%	\$38,720
Subtotal		\$522,718
Bond and Insurance	2.50%	\$13,067.96
Subtotal		\$535,786
Design Contingency	5.00%	\$26,789.31
Estimated Base Bid Construction Costs		\$562,576
Total Estimated Construction Costs		\$562,576
<u>Soft Cost Summary</u>		
Sales Tax		
Permitting		
Testing		
Construction Contingency		
Design Services Contingency		
Project Management		
Estimated Soft Costs	60.00%	\$337,545
Total Estimated Project Costs		\$900,121
TOTAL ESTIMATED PROJECT COSTS (ROUNDED)		\$1,000,000

PHASE B1

DATE: May 8, 2019
PROJECT: AYTC existing building renovation

AREA
EST TYPE: Feasibility study

Item	Description	Quantity	Unit Cost	Sub-Total	Total
A	Pro Shop & Viewing Area Mezzanine				\$171,240
	Add lateral bracing	1	ls	\$20,000	
	Flooring	2,640	4.50	\$20,000	
	HVAC modifications	2,640 sf	16.00	\$42,240	
	Modify lighting (reuse existing)	2,640 sf	0.00	\$0	
	Electrical distribution	6 ea	1,000.00	\$6,000	
	Data and FA modifications	1 ls	4,000.00	\$4,000	
	Egress stairs	1 ls	15,000.00	\$15,000	
	Platform lift	1 ea	40,000.00	\$40,000	
	Glass barrier at balcony edge	80 lf	300.00	\$24,000	
B	All Gender toilet/locker rooms 1st floor				\$77,200
	Demolition and disposal	250 sf	8.00	\$2,000	
	Cutting and patching (trenching for utilities)	1 ls	2,500.00	\$2,500	
	Toilet fixtures	10 ea	3,500.00	\$35,000	
	Ceilings (GWB)	250 sf	12.00	\$3,000	
	Flooring	250 sf	6.00	\$1,500	
	Partitions	250 sf	16.00	\$4,000	
	Doors	1 ea	3,500.00	\$3,500	
	Seal conc floor	250 sf	5.00	\$1,250	
	PVC wainscot	1 ls	2,500.00	\$2,500	
	Painting	1 ls	3,500.00	\$3,500	
	Toilet partitions	5 ea	850.00	\$4,250	
	Toilet accessories	1 ls	1,200.00	\$1,200	
	Lighting	250 sf	12.00	\$3,000	
	HVAC	250 sf	16.00	\$4,000	
	Electrical	4 ea	1,000.00	\$4,000	
	Fire alarm modifications	1 ls	2,000.00	\$2,000	
C	Community Multipurpose Rooms at 1st floor				\$152,000
	Partitioning	2,000 sf	10.00	\$20,000	
	Ceilings (GWB)	2,000 sf	10.00	\$20,000	
	Flooring	2,000 sf	6.00	\$12,000	
	Painting	1 ls	4,000.00	\$4,000	
	Doors	2 ea	3,500.00	\$7,000	
	Casework and slot wall	1 allow	20,000.00	\$20,000	
	Lighting	2,000 sf	12.00	\$24,000	
	HVAC	2,000 sf	16.00	\$32,000	
	Electrical	2,000 sf	4.00	\$8,000	
	Security	1 ls	5,000.00	\$5,000	
D	Replace Lighting				\$16,800
	Admin/office	1 ls	16,800.00	\$16,800	
				TOTAL:	\$417,240

APPENDIX C.5: PHASE B2 COST ESTIMATE

Cost estimate summary provided for reference:

Phase	Scope of Work	Schedule/Comments	Estimated Project Costs
Phase A1	- Site ADA - Toilet, Court and Admin Area ADA - Fire Alarm Upgrades - Entry Soffit replacement	Summer/Fall of 2019	2.1 Million
Phase A2	- Over-roof and roof assembly insulation - Voluntary structural upgrades of cross bracing tension rods	- To be determined based on available funding. - Recommend construction not prior to summer/fall of 2022	3.5 Million
Phase A3	- New court area heating & ventilation - Replace court lighting	- To be determined based on available funding - Recommend construction not prior to summer/fall of 2025 (assuming exterior wall insulation has been installed as per the Memorandum of Understanding with the City's Office of Sustainability & Environment)	3 Million
Phase B1	Interior Renovation - Community multipurpose room - Platform lift & egress stairs at mezzanine - Modify administration area for pro shop & viewing area - All-gender toilet/locker room	- To be determined based on available funding - Tenant Improvement work does not affect Substantial Alterations work phasing	1 Million
PHASE B2 Phase B2	AYTC Expansion (five court building addition)	- To be determined based on available funding - Recommendation to establish upper parking area prior to construction of new building so that existing facility can be utilized during construction	22.5 Million

PHASE B2 - NEW 5 INDOOR COURT FACILITY

AMY YEE TENNIS CENTER FACILITY IMPROVEMENTS

SUMMARY OF WORK COST ESTIMATE

May 8, 2019

Item		
Subtotal New Facility Construction Costs		\$9,506,533
GC General Conditions	20.00%	\$1,901,307
Subtotal		\$11,407,839
General Contractor Profit	8.00%	\$912,627
Subtotal		\$12,320,466
Bond and Insurance	2.50%	\$308,011.65
Subtotal		\$12,628,478
Design Contingency	10.00%	\$1,262,847.78
Estimated Base Bid Construction Costs		\$13,891,326
Total Estimated Construction Costs		\$13,891,326
<u>Soft Cost Summary</u>		
Sales Tax		
Permitting		
Testing		
Construction Contingency		
Design Services Contingency		
Project Management		
Estimated Soft Costs	60.00%	\$8,334,795
Total Estimated Project Costs		\$22,226,121
TOTAL ESTIMATED PROJECT COSTS (ROUNDED)		\$22,500,000

PHASE B2

DATE: May 8, 2019
PROJECT: NEW 5 INDOOR COURT FACILITY
AREA 34,800
EST TYPE: Feasibility study

Item	Description	Quantity	Unit Cost	Sub-Total	Total
A	Substructure				\$1,472,250
A10	Foundations				
	Spread footings	803 lf	750.00	\$602,250	
	Slab	34,800 sf	25.00	\$870,000	
B	Shell				\$2,786,056
B10	Superstructure				
	steel structure	33,350 sf	18.50	\$616,975	
	floor construction- topping slab	33,350 sf	10.10	\$336,835	
B20	Exterior Enclosure				
	exterior walls, rain screen metal panel c.i.	14,400 sf	71.00	\$1,022,400	
	exterior windows	302 sf	103.00	\$31,106	
	exterior doors, glazed aluminum	2 pair	8,000.00	\$16,000	
B30	Roofing				
	PVC decor band roof	34,670 sf	22.00	\$762,740	
C	Interiors				\$192,887
C10	Interior Construction				
	partition walls, GWB	3,580 sf	13.00	\$46,540	
	partition walls, glass	320 sf	70.00	\$22,400	
	interior doors, HM frame wood slab	9 ea	2,150.00	\$19,350	
	millwork, reception	25 lf	350.00	\$8,750	
C20	Stairs				
	stair construction	1 flight	25,000.00	\$25,000	
	stair for spectator seating	1 ls	10,000.00	\$10,000	
	stair finishes, rubber	29 tread	22.00	\$638	
C30	Interior Finishes				
	wall finish, paint	7,200 sf	0.80	\$5,760	
	floor finishes office, carpet tile	1,450 sf	6.65	\$9,643	
	floor finishes, lower level seal concrete	1,300 sf	1.50	\$1,950	
	floor finishes courts	32,050 sf	1.12	\$35,896	
	ceiling finishes office, tegular ACT	1,450 sf	4.80	\$6,960	
D	Services				\$1,914,300
D10	Conveying				
	elevator, electric traction, gurney, 4,000lb	1 ls	155,000.00	\$155,000	
D20	Plumbing				
	water closet	2 ea	3,500.00	\$7,000	
	lavatory	2 ea	3,000.00	\$6,000	
	water fountain	1 ea	3,800.00	\$3,800	
	mop sink	1 ea	2,500.00	\$2,500	
D30	HVAC				
	systems allowance	34,800 sf	24.00	\$835,200	
D40	Fire Protection				
	fire alarm system included in electrical	0 sf	0.00	\$0	
D50	Electrical				
	Lighting	34,800 sf	10.00	\$348,000	
	Power	34,800 sf	10.00	\$348,000	
	data, fire, security	34,800 sf	6.00	\$208,800	

PHASE B2

E	Equipment & Furnishings				\$20,940
E10	Equipment				
	tennis posts, nets	5 ea	1,888.00	\$9,440	
E20	Furnishings				
	office furniture	2 ls	3,000.00	\$6,000	
	conference room, 10 chairs & table	1 ls	3,500.00	\$3,500	
	reception task chairs	2 ls	1,000.00	\$2,000	
F	Special Construction & demolition				\$0
F10	Special Construction				
	none	1 ls	0.00	\$0	
F20	Selective Building Demolition				
	none	1 ls	0.00	\$0	
G	Building Sitework				\$3,120,100
G10	Site Preparation				
	demolish existing parking lot	29,600 sf	5.00	\$148,000	
	Grading and excavation Building	4,000 cy	65.00	\$260,000	
	Grading and excavation parking lot	8,000 cy	65.00	\$520,000	
	Misc retaining walls/shoring	1 allow	200,000.00	\$200,000	
G20	Site Improvements				
	asphalt with binder on stone base	42,000 sf	7.00	\$294,000	
	extruded curb	2,000 lf	15.00	\$30,000	
	grass	32,200 sf	0.50	\$16,100	
	planting allowance	1 ls	50,000.00	\$50,000	
	geotechnical allowance for slope stabilization	1 ls	150,000.00	\$150,000	
	street improvements allowance	1 ls	500,000.00	\$500,000	
G30	Site Civil/Mechanical Utilities				
	Water main extension	1 ls	360,000.00	\$360,000	
	Sanitary sewer relocation	1 ls	230,000.00	\$230,000	
	Parking lot drainage	1 ls	150,000.00	\$150,000	
G40	Site Electrical Utilities				
	New electrical service	1 ls	45,000.00	\$45,000	
	New vehicle charging stations	5 ea	5,000.00	\$25,000	
	Site lighting	1 ls	100,000.00	\$100,000	
G50	Canopy Structure	300 sf	140.00	\$42,000	
				TOTAL:	\$9,506,533

APPENDIX D:

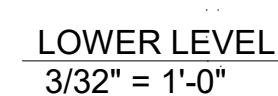
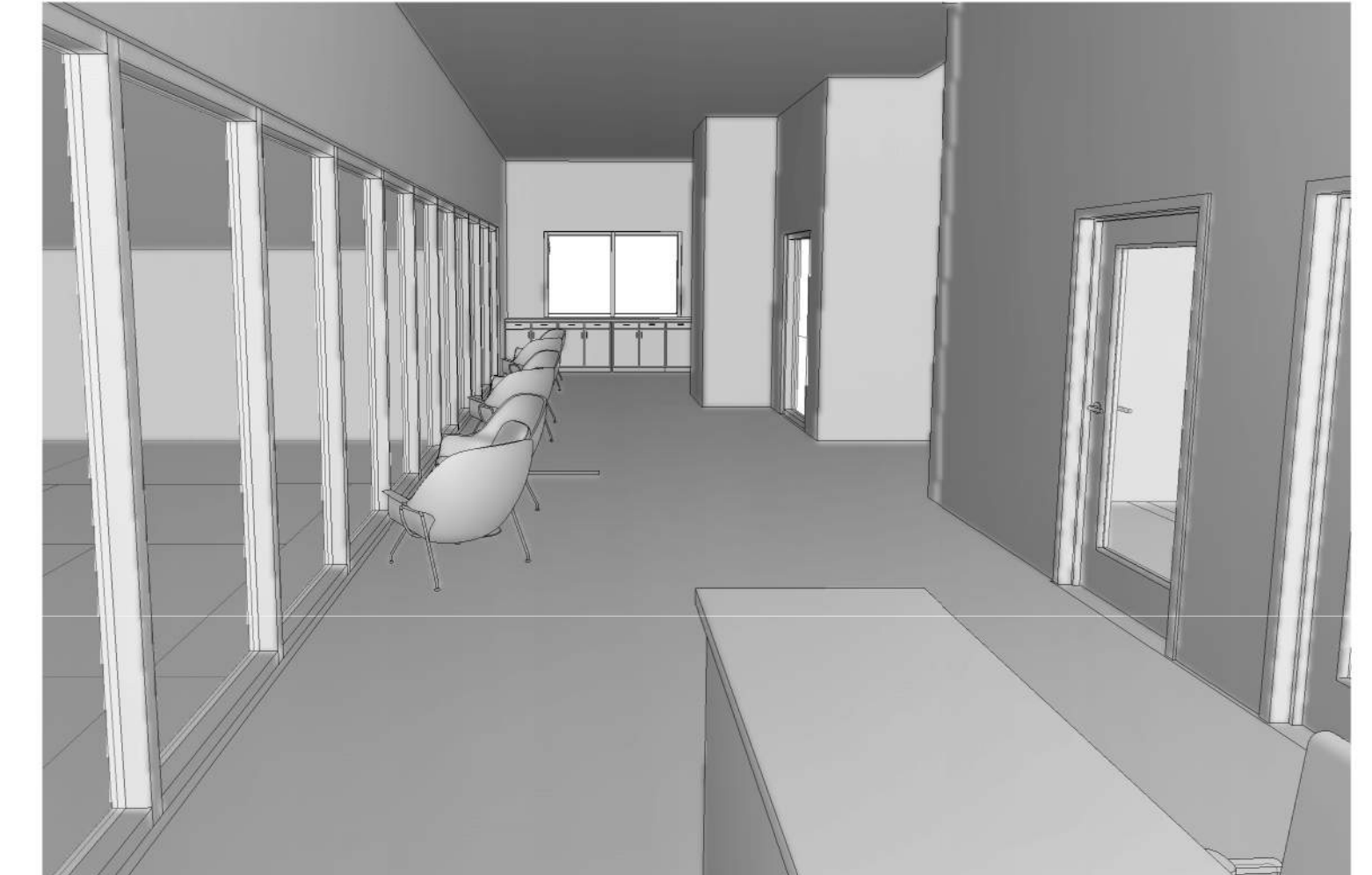
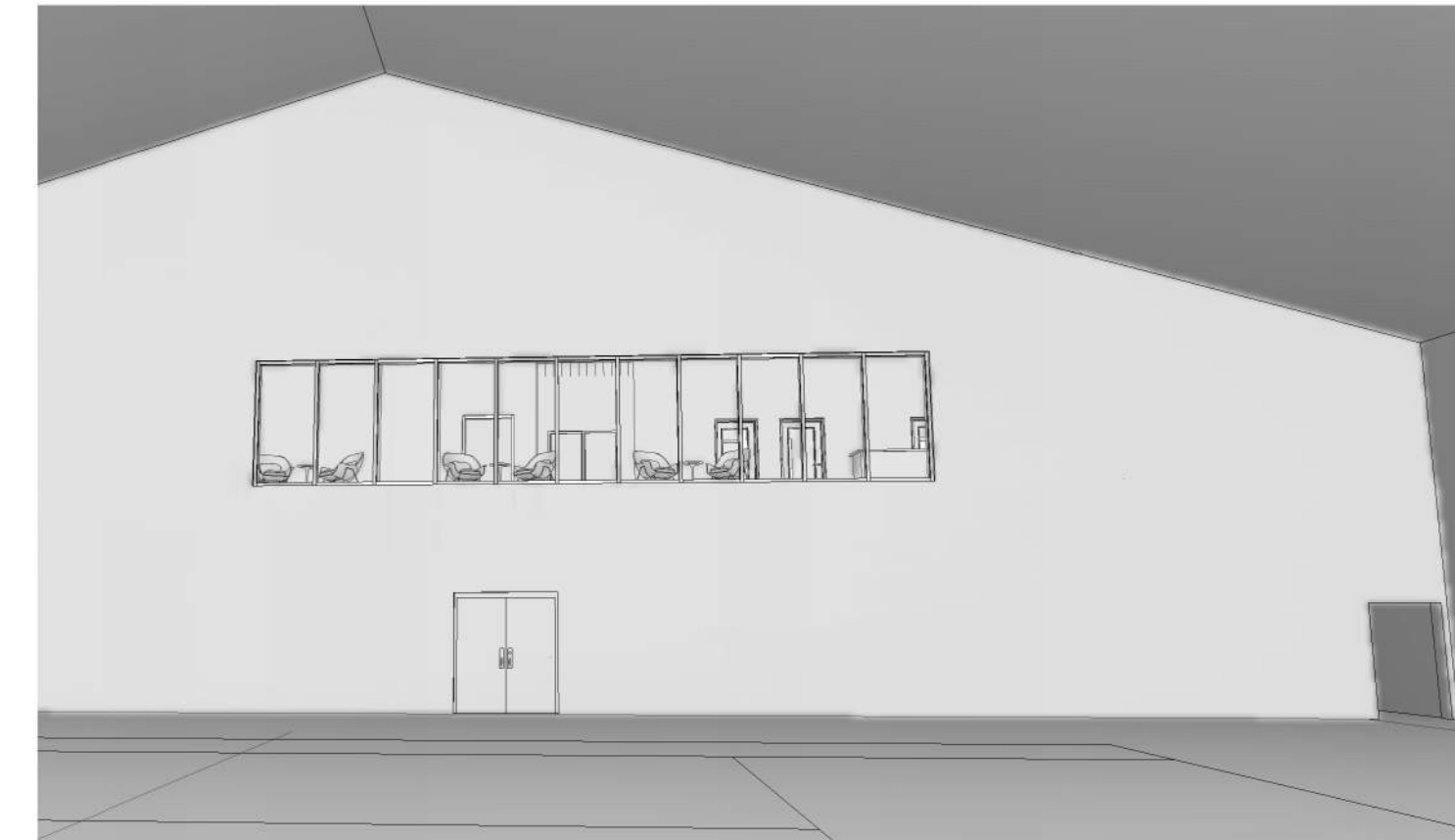
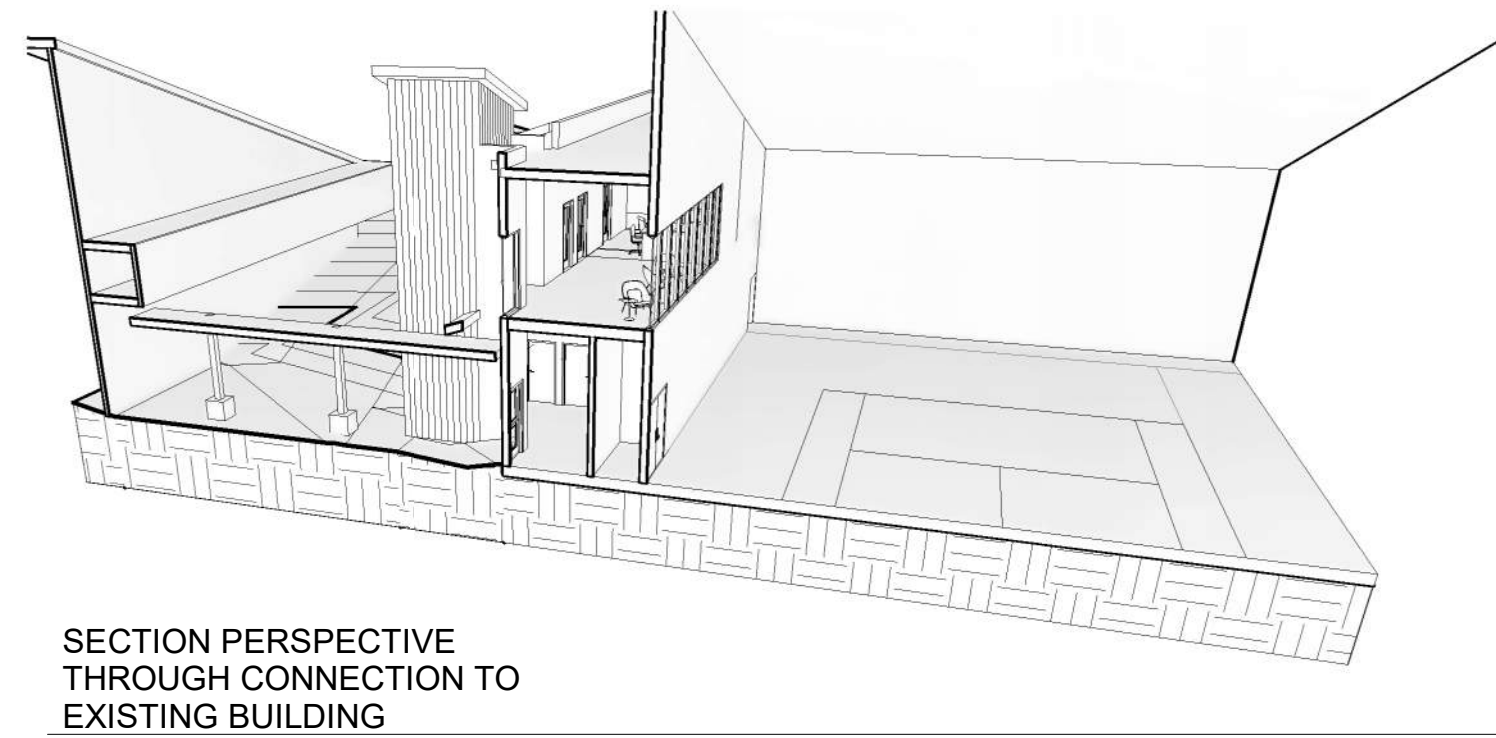
WORKS CITED

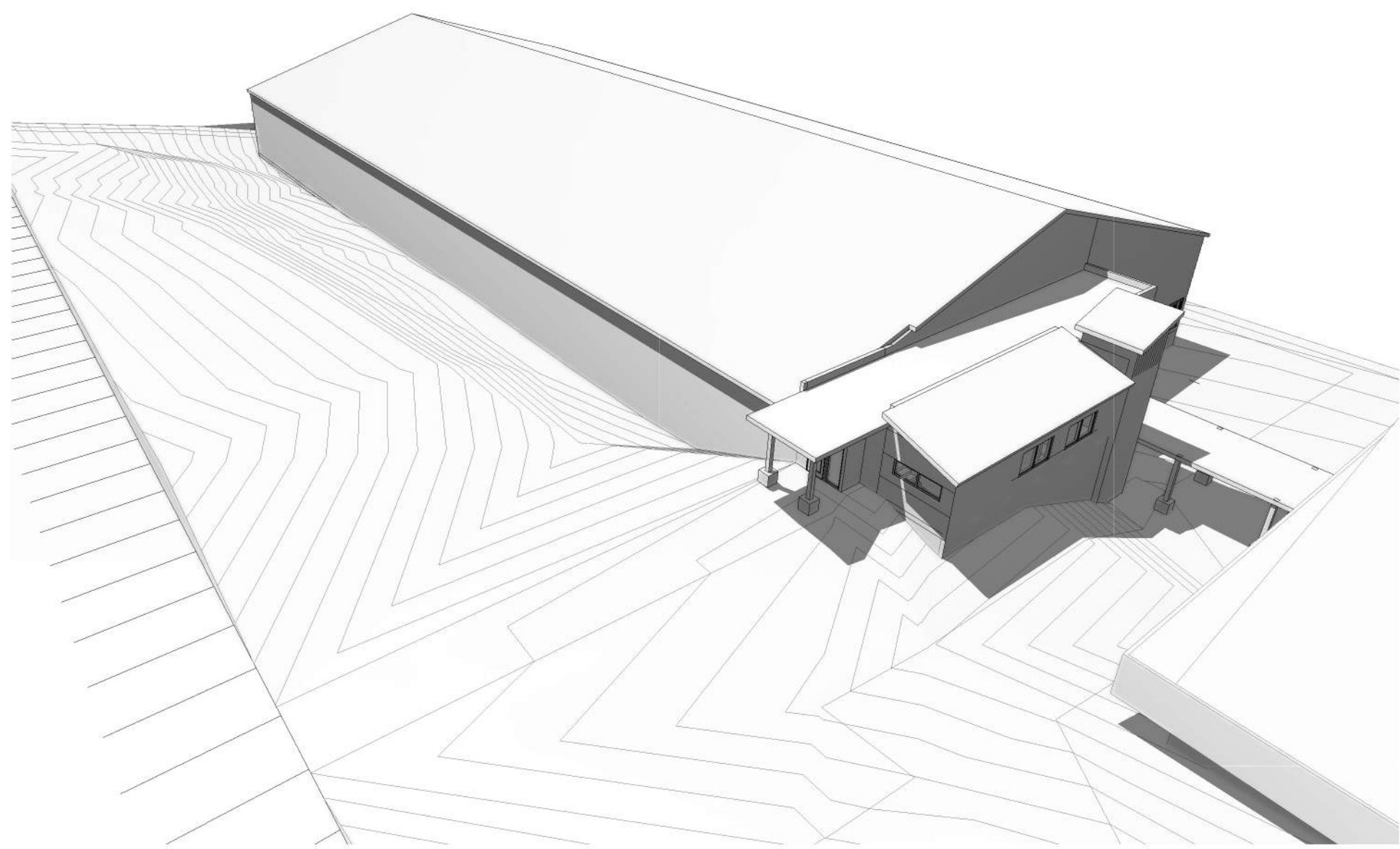
Works Cited

1. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page 19
2. Legacy Plan (SEATTLE PARKS, 2014), page 122
3. Legacy Plan (SEATTLE PARKS, 2014), page 123
4. Legacy Plan (SEATTLE PARKS, 2014), page xi
5. Tennis Center Proposal and Feasibility Study (Tennis Outreach Programs (TOPs), 2011), page 4.
6. Amy Yee Tennis Center Feasibility Study Covering Outdoor Tennis Courts (INNOVA ARCHITECTS, March 2018) Page A/2; Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page i.
7. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page ii.
8. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page viii.
9. Race and Social Justice Initiative (RSJI), City of Seattle, 2008
10. Equity Area: Arts and Culture, City of Seattle Department of Parks and Recreation
11. Racial Equity Community Survey, City of Seattle, March 2014
12. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page 30
13. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page viii.
14. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page 15
15. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, February 2018), page 19
16. Amy Yee Tennis Center Market Analysis and Financial Assessment Update (BERK, April 2015)

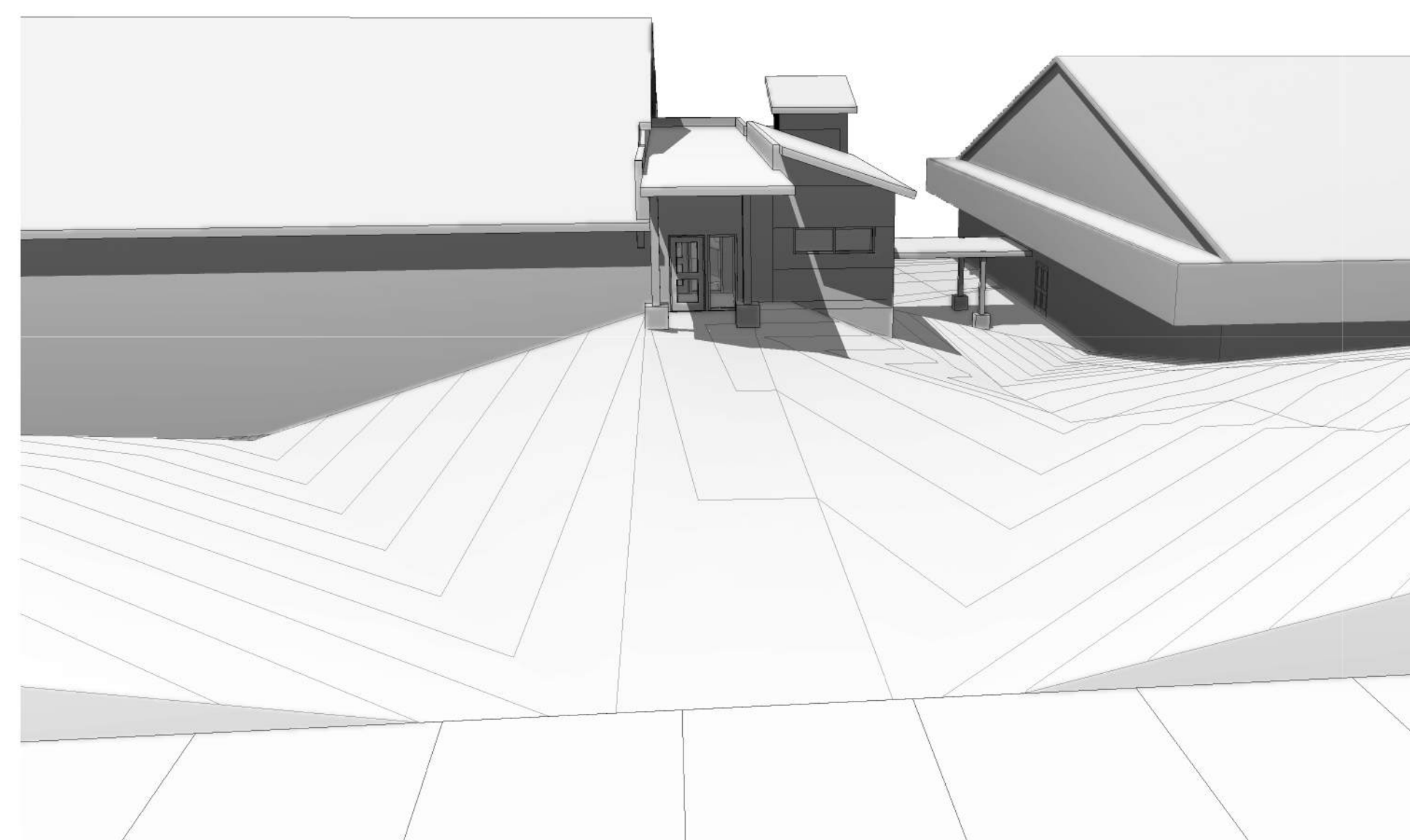
APPENDIX E:

Proposed New Building Layout Drawings

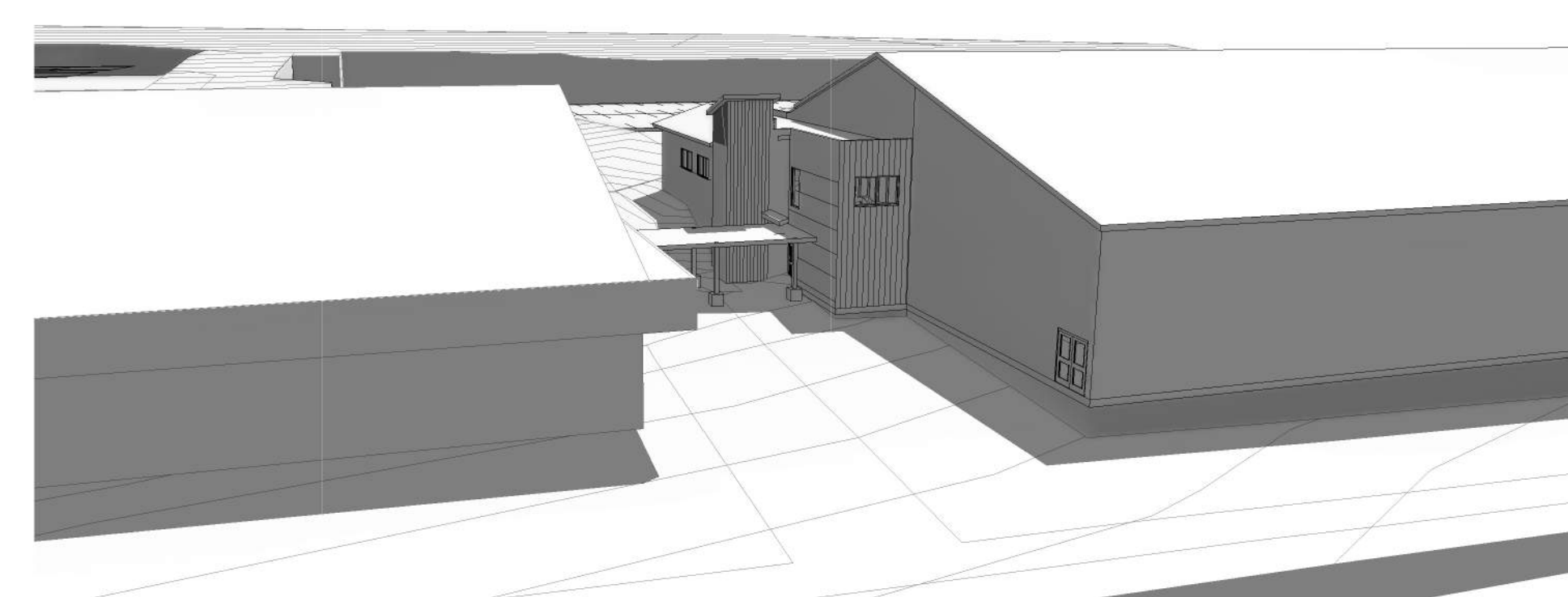




BIRDS EYE VIEW FROM
NORTH EAST



VIEW FROM PARKING



BIRDS EYE VIEW FROM
NORTHWEST