



PENN CONNECTS: URBAN PARK, FIELDS, RECREATION AND ATHLETIC FACILITIES

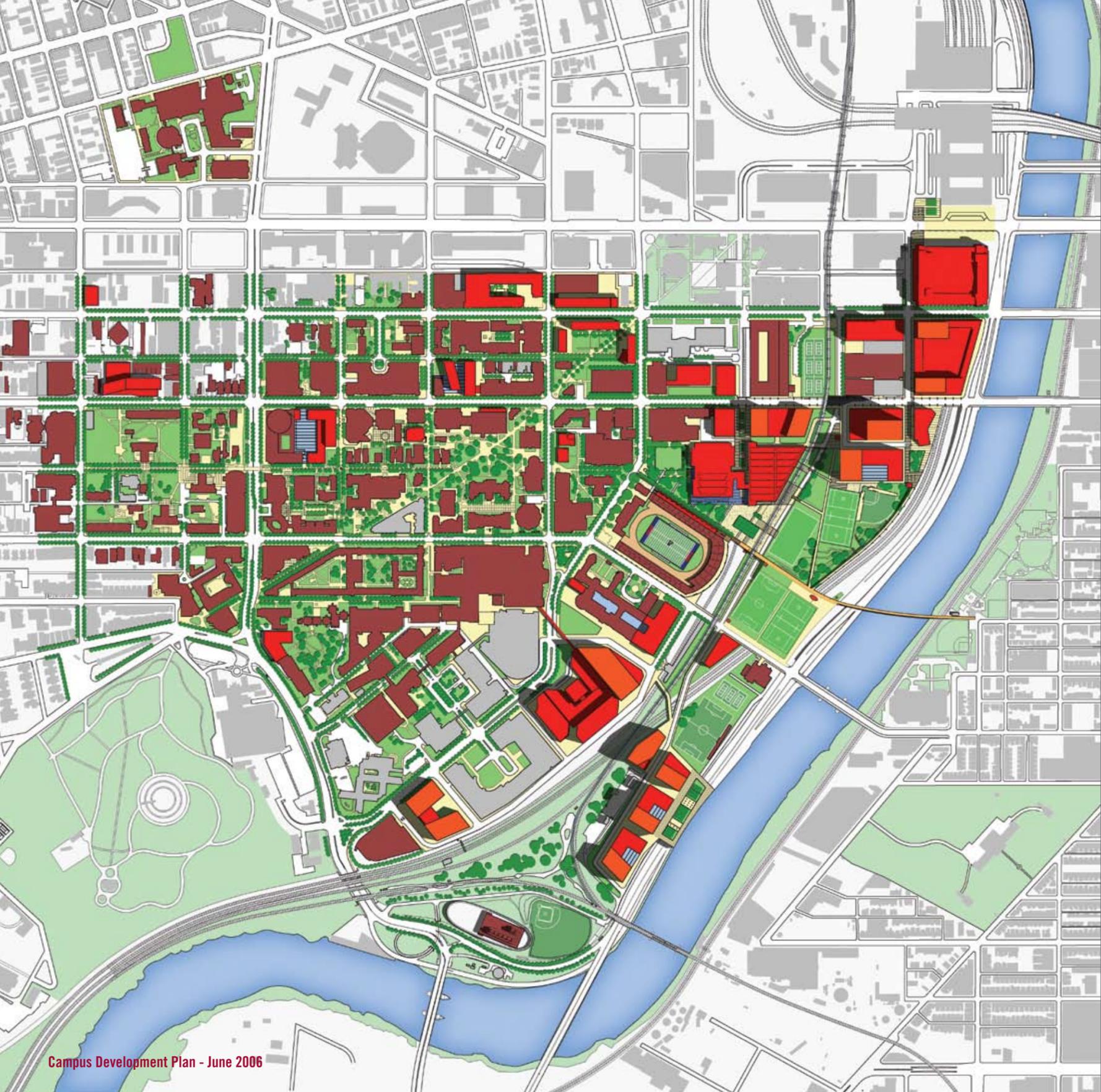


FEBRUARY 2007

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Introduction

CAMPUS DEVELOPMENT PLAN

Penn Connects, the Campus Development Planning Study for the University of Pennsylvania was submitted by Sasaki Associates in June 2006. The plan acknowledges the unprecedented opportunity to transform the Penn campus in response to the acquisition of the postal properties along the Schuylkill River. This campus expansion of contiguous land will enable the University, for the first time in history, to establish a major physical presence along the Schuylkill River corridor, create new gateways to the campus from the city, and establish new connections with the surrounding communities. It will also enable the University to address short term programmatic needs, as well as strategic priorities that may arise as they are developed and improved over the next 30 years or more.

THE PENN CONNECTS VISION PLAN

The Vision Plan that emerged from the master planning process focused on the following premises:

- Establish new connections and gateways between the campus, Center City and the neighboring communities,
- Concentrate mixed-use, dense development with strategic locations taking advantage of existing transportation hubs,
- Create a signature new park to include sports and recreation fields east of Franklin Field on the site of the existing Bower Field and the surface parking areas of the postal lands,

- Provide for a series of new public gathering and circulation spaces in the Palestra and Franklin Field area that serve to link the postal lands and the campus,
- Accommodate significant development potential for future academic, research and supporting program elements, and,
- Establish a University presence along the Schuylkill River.

The circulation, landscape framework, and development opportunities of the campus vision are conceptually organized by "Bridges of Connectivity," a series of existing, proposed, and virtual themed bridges that link the campus and eastern expansion to Center City.

URBAN PARK, FIELDS, RECREATION AND ATHLETIC FACILITIES

One of the key areas identified by the Campus Plan is the park and athletics and recreation area east of 33rd Street and from Walnut Street to the South Street Bridge. The central part of this area was designated as the "Sports and Recreation Bridge".

This study for the "Urban Park, Fields, Recreation and Athletic Facilities" extends the work of the Campus Plan and focuses on the design strategies, phasing options and cost implications of making this area of the campus plan into a built reality.



Bridges of Connectivity



Locust Extension-Sports Bridge

GOALS OF THE STUDY

The following goals were considered as part of this study:

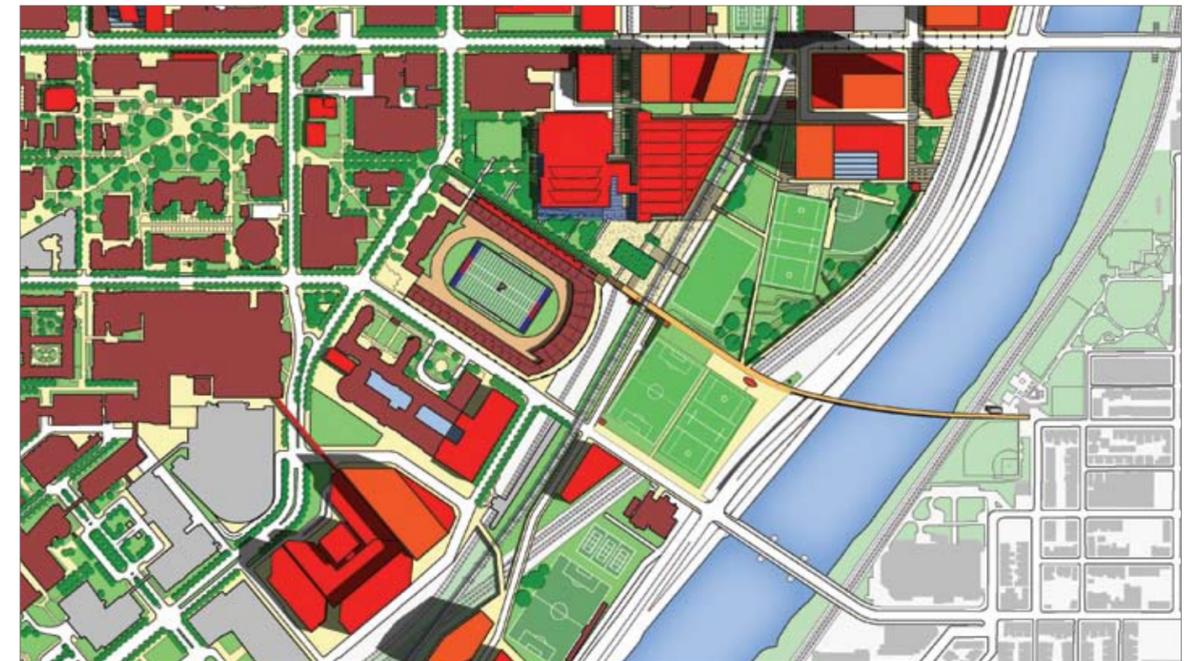
- Assess site conditions, identify regulatory and environmental constraints and evaluate the overall condition of the newly acquired land to determine the most suitable and sustainable approach to site development.
- Confirm programmatic needs for existing and proposed buildings and outdoor fields as defined by the Department of Recreation and Intercollegiate Athletics.
- Maximize the potential for renovation/re-use of historic buildings such as the Palestra, Hutchinson Gymnasium and Franklin Field.
- Explore the potential for connecting new sports and recreation facilities to complimentary activities in existing buildings.
- Identify alternative sites for the location of a new racquet center, an expansion of outdoor tennis courts, a natatorium, and an indoor track.
- Evaluate an alternative distribution of indoor and outdoor athletic and recreational venues to the multi-purpose field house proposed in the Campus Development Plan.
- Maximize public open space opportunities and preserve the desired overall landscape character as identified in the Campus Development Plan.

- Integrate other site design initiatives including elevated pedestrian walks, service areas, security, and parking.
- Ensure that environmental sustainability becomes a priority in the design process.
- Develop a phasing strategy for building projects and site improvements that would support a sequential implementation of discrete projects, taking advantage of the near term use of “reserved” site parcels that could be developed at a later stage.
- Evaluate the feasibility of implementing an air-supported structure over one of the outdoor fields or over Franklin Field to extend the practice and recreational opportunities in an indoor-protected environment.
- Evaluate the cost of all proposed facilities within a phased development plan.

STRUCTURE OF THE REPORT

“Penn Connects: Urban Park, Fields, Recreation and Athletic Facilities,” is organized into two main sections. The first section, “Urban Park and Fields”, focuses on the design of the outdoor spaces. The second section, “Recreation and Athletic Facilities”, focuses on the design and programming of proposed new and renovated buildings.

The Campus Development Plan, completed in June 2006, featured a multi-purpose field house on the site of the Levy Tennis Pavilion. This facility included a natatorium, racquet sports and an indoor track in a stacked configuration that required one concurrent construction phase.

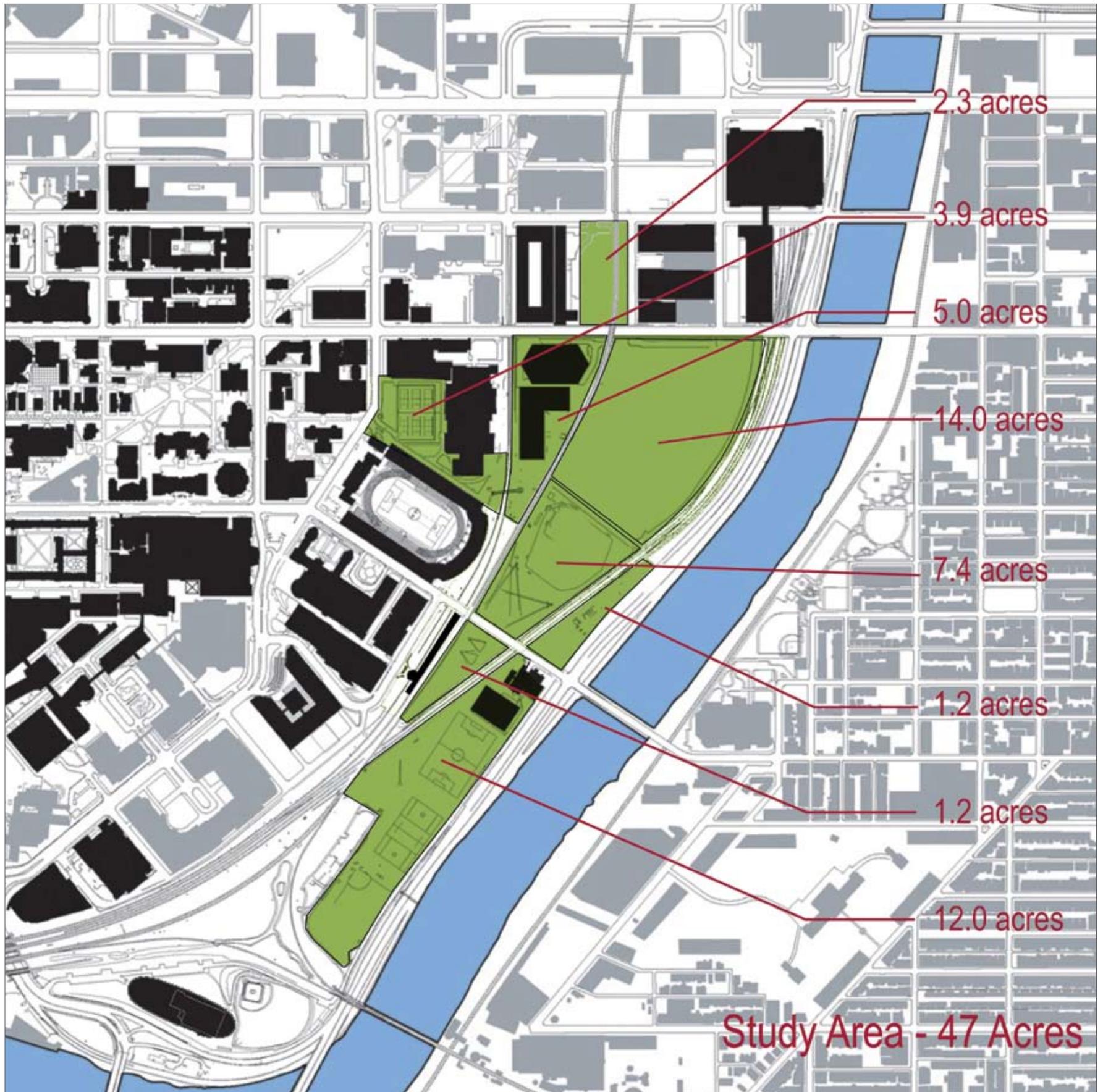


Campus Development Plan - June 2006

The revised plan, identified in this study, replaces the proposed field house with a Racquet Center at the Levy site and disaggregates the natatorium and indoor track while proposing a seasonal air-supported structure over one field.



Urban Park and Fields and Athletic Facilities Development - February 2007



2

Urban Park and Fields

Penn Connects envisions a dramatic transformation of the postal lands property in conjunction with the redevelopment of existing, under-utilized open space surrounding the Palestra and Franklin Field.

This section outlines the redevelopment of these spaces and their transformation into an urban park and fields, as an open space extension of the University's existing campus landscape framework.

New open space opportunities exist at two levels: the upper level, between 33rd Street and the SEPTA Regional Rail Line, is at grade with the existing campus core; and the lower level, between SEPTA and the Amtrak Northeast Corridor in the river's floodplain, features a merge of recreational and athletic environments. The key components include:

- Palestra Green - a new public green in front of the historic Palestra,
- Franklin Field Promenade - a new east-west walkway extending Locust/Smith walks along the north arcade of Franklin Field,
- Franklin Field Plaza and Stairs - a public plaza and overlook that bridges the SEPTA Rail Line and features a broad stair with access down to the new park and fields,
- Urban Park - a park landscape accessible for public use, that is an extension of the College Green environment,
- Recreation and Athletic Fields - insertions of a variety of outdoor sport field venues, with potential for a seasonally enclosed field,
- Schuylkill Promenade - a raised walk along the eastern park border, parallel to the river.

The proposed relocation of the existing six tennis courts from in front of the Palestra to the lower fields provides a unique opportunity for a new campus green. Palestra Green, with its design echoing the character of College Green, will add an urban public park to this academic and athletic precinct east of 33rd Street. It will also be the starting point of the new Franklin Field Promenade, the extension of the Locust/Smith walkway axis leading to the new park and fields to the east.

On a larger scale, the Franklin Field Promenade will create a strong visual and physical connection from the core campus toward the new urban park and - in the final stage of campus development - the pedestrian bridge across the river to the city.

Franklin Field Plaza, a new urban public space will anchor the Promenade at the east and provide a venue for outdoor pre-game celebrations. The plaza will bridge the channel of the SEPTA line and, with broad stairs stepping down to the fields, will link the upper and lower levels.

The implementation of the Urban Park and Fields will occur in multiple phases over a period of time, and is closely intertwined with the realization of the architectural program elements identified in section three of this report.



Urban Park and Fields - Phase 2

EXISTING CONDITIONS AND CONSTRAINTS

EXISTING CONDITIONS

The existing 24-acre site extends from Walnut Street to the South Street Bridge and includes a 14-acre surface parking area and playfields to their south, as well as a series of transportation corridors. Listed from west to east, the corridors are as follows: the SEPTA Regional Rail Line, the CSX Highline freight railway, Amtrak's Northeast Corridor, and Interstate 76 (Schuylkill Expressway).

These transportation corridors and their associated service, maintenance and access requirements, all combine to segregate the site from adjacent activity. Overcoming these barriers is a key goal of the project.

TRANSPORTATION CORRIDORS

SEPTA Rail Line

The SEPTA Regional Rail Line borders the western edge of the site, connecting 30th Street Station and University City Station with the western suburbs and the airport. The Paley Bridge, the pedestrian bridge east of Franklin Field, has allowed a safe pedestrian crossing over SEPTA since 1981.

CSX Highline Freight Railway

The elevated Highline freight railway parallels the SEPTA line and is elevated approximately 60' above ground, supported by stone and concrete piers and steel trusses. A 15'-wide easement is to be maintained on the east and west sides of the Highline for maintenance vehicle access. The land below the Highline will be available for limited use and access.

Amtrak Northeast Corridor Railway

The Amtrak rail line begins at the eastern edge of the site and then crosses the site. A 15' wide easement is to be provided along the Amtrak rail line for maintenance and access along with a 55' wide turn around space for maintenance vehicles just north of the existing Bower Field. Access to this corridor will be provided from Lower Walnut Street and along the Amtrak rail line.

Interstate 76 (Schuylkill Expressway)

The four lane interstate highway and its access ramps define the eastern limits of the site, forming a barrier to and extending over the west bank of the Schuylkill River.

Walnut Street and South Street Bridges

The Walnut and South Street Bridges mark the northern and southern edges of the site. The bridges create opportunities for multiple-level access points for development. They pass over the SEPTA line and under the Highline. The South Street Bridge is scheduled for reconstruction from November 2007 to Spring 2009. A 100'-wide construction easement to the north and south of the bridge is to be maintained during the construction period.

Lower Walnut and Lower 30th Streets

Lower Walnut and Lower 30th Streets extend into the site. Both are city streets and are extended to be vacated from the city plan and/or to be relocated.

SITE FEATURES

100 Year Floodplain

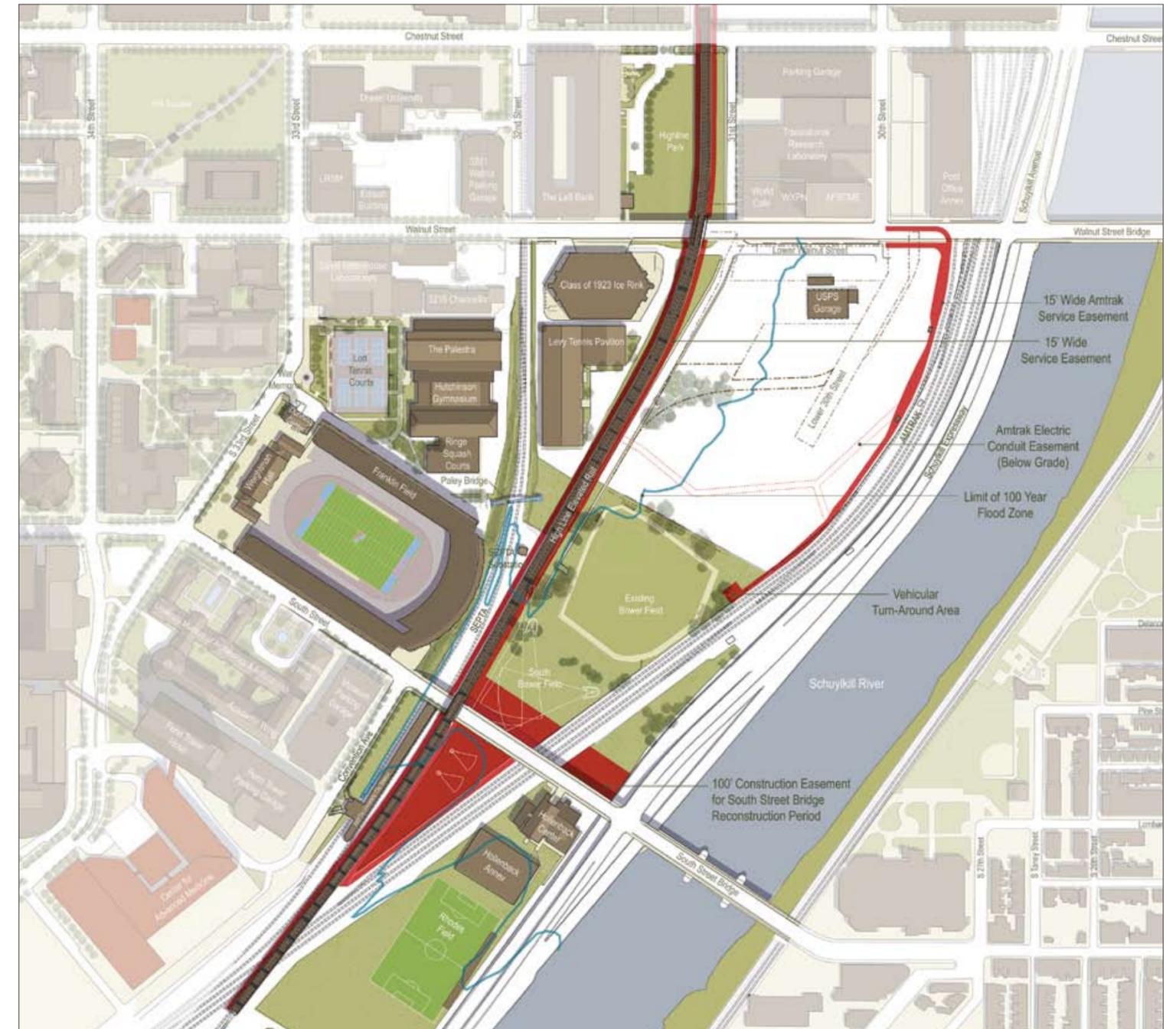
Based on the FEMA Flood Map for the area, a major portion of the site lies within the 100-year floodplain of the Schuylkill River. The floodplain extends southward from Walnut Street Bridge to beyond the South Street Bridge. This is delineated in blue on the constraints plan.

Amtrak Underground Electric Conduit

A 20'-wide underground electrical easement for Amtrak crosses the site and is to be maintained.

Soil Conditions and Remediation

Throughout its history, the site has served industrial and rail uses, adversely impacting the environmental quality and condition of the soil. In recent times, the site was used primarily for vehicular parking, with storage, truck wash, and a fueling station. The site has been found to contain localized areas of contaminated soil. Proposed remediation measures include a combination of contaminant and removal with full remediation.



Existing Conditions and Constraints

PROGRAM ELEMENTS

ATHLETIC AND RECREATION PROGRAM NEEDS

The Department of Recreation and Intercollegiate Athletics (DRIA) identified a detailed program that included new field venues and other recreation amenities. Among these are:

- A proposed women's NCAA quality softball stadium with synthetic infill turf with seating for 1,000 spectators, an electronic scoreboard, and storage below the bleachers,
- A synthetic infill turf field to accommodate NCAA men's and women's lacrosse and soccer with a full size field measuring 360' x 210'. This primary field could be enclosed for part of the year with a seasonal air structure, permitting indoor practice for intercollegiate and recreational sports,
- A synthetic infill turf field on top of the future parking garage adjacent to South Street Bridge to accommodate NCAA women's field hockey,
- A minimum of six new outdoor tennis courts with bleachers to accommodate the relocation of the existing Lott tennis courts. Additional courts are recommended,
- All field venues are to incorporate the use of synthetic infill turf where possible and sports lighting to permit evening use of the fields.

PROGRAM ELEMENTS

FIELD #1 (360' x 210')

Synthetic Turf
Sports Lighting
Secured Fencing
NCAA Soccer (360' x 225')
NCAA Women's Lacrosse (360' x 225')
NCAA Men's Lacrosse (330' x 180')
Club / Intramurals / Recreation

FIELD #2 (210' x 105')

Natural Turf
Two Recreation Fields
Sports Lighting
Open Active Recreation Space

FIELD #3 (370' x 235')

Synthetic Turf
Sports Lighting
Secured Fencing
NCAA Soccer (345' x 210')
NCAA Women's Lacrosse (345' x 210')
NCAA Men's Lacrosse (330' x 180')
Club / Intramurals / Recreation

SOFTBALL STADIUM

Synthetic Turf with Skinned Infield
Outfield Area play field
Sports Lighting
Secured Fencing
NCAA Softball Field
Right Field 200', Center Field 225',
10' Warning Track)
Two Dugouts
Two Bullpens
Two Batting Cages
Spectator Seating for 1,000
Press Box
Equipment Storage
Electronic Scoreboard

FIELD #4 (300' x 180')

Synthetic Turf
Sports Lighting
Fencing
NCAA Women's Field Hockey
Club / Intramurals / Recreation

TENNIS COURTS (75' x 36' x 78' each)

12 Courts
Sports Lighting
Spectator Seating for 400
Viewing Aisle for Coaches

SAND VOLLEYBALL (60' x 30')

2 Courts

ROPES COURSE

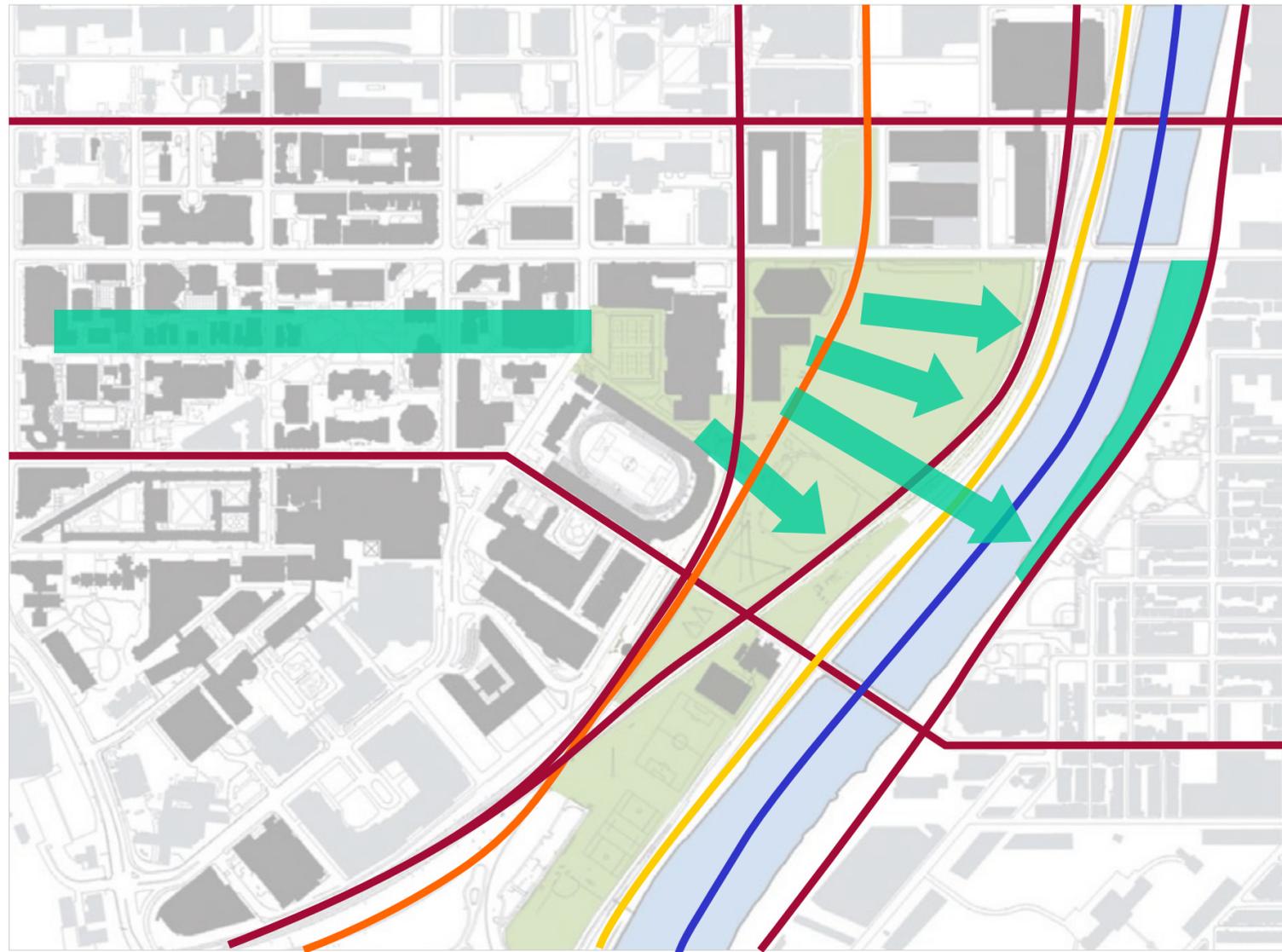
High Ropes Course
Low Ropes Course

ENTRY PAVILION/PLAZA (600 sf)

Check-in Area
Equipment Storage
Restrooms / Changing Rooms



Organization of Athletic Program Elements



Network of Linear Movements Along and Across the River

MOVEMENT AND FLOW

The site is shaped and characterized by elements of movement and flow. The transportation of people and materials across the site occurs at various levels and directions leaving strong traces on the land. In the north-south direction, parallel bands of the SEPTA Regional Rail Line, the CSX Highline, Amtrak, and the Schuylkill Expressway and River connect the city to regional circulation systems.

Perpendicular to these bands is the movement from campus toward the new land and across the river; defined by major lines of the city grid, like Walnut and South Streets, that establish boundaries for the site and provide a physical connection between the city and campus. These movements take place in various vertical layers, creating a three-dimensional structure of intertwined linear elements.

The Urban Park and Fields will define a series of new open spaces within this network of streets, river, and tracks, extending and completing existing connections in both directions. College Green, evolving from the campus core, rolls out toward the river's edge, joining the campus landscape with that of the river. A new pedestrian bridge continues the Locust Walk spine across the river and links it to Schuylkill River Park and the western Center City neighborhoods. A proposed raised walk parallels the river creating a pedestrian connection between Walnut and South Streets. At the center of these movements and flows, the park accommodates the University's outdoor sports and recreation facilities, concentrating human movement and energy at the eastern gateway to Penn.



Conceptual Sketch



LANDSCAPE STRATEGY

The existing campus is characterized by tall, deciduous trees within a network of lawns and walkways, reconciling a heterogeneous collection of buildings. This park-like landscape provides a familiar realm for informal retreat and relaxation.

The design of the Urban Park translates the image of the existing campus landscape into a new context and condition. Informal plantings of trees create continuous shady groves, which contrast with the vast, sun-exposed playfields and plazas. The groves become the counter-point to the fields: one is host to controlled, focused, and organized activity, while the other gives rise to informal gathering, relaxation, and casual sport.

The choice of tree species and the modeling of the park's surface derive from the second function of the groves; they are designed to absorb the storm water runoff from the park's surfaces. A more advanced discussion of sustainability follows.



Looking East along Locust Walk



College Green Landscape Character



College Green "Classroom"



Campus Open Space Network Extended to New Urban Park Land

PHASING

The realization of the Urban Park and Fields will require a phased implementation to accommodate the relocation of existing uses, opportunities to renew current facilities and to construct new venues. Moving from west to east, the open spaces created between 33rd Street and the Highline, are tightly framed by buildings - Franklin Field, David Rittenhouse Laboratories, the Palestra and Hutchinson Gymnasium - resulting in a series of new public spaces: The Palestra Green and Franklin Field Promenade and Plaza.

Descending a broad stairway from the plaza, one arrives at a new public recreational amenity featuring park land and fields. A new pedestrian bridge extends Locust Walk east toward and across the river. It starts at the Franklin Plaza, slides underneath the trusses of the Highline, parallels the proposed parking deck, and finally bends as it crosses the river.

An undulating raised walkway, the Schuylkill Promenade connects Walnut and South Streets. Intellectually, the walk relates to the existing Highline which frames the play fields along the western edge as an industrial sculptural object. The new walk reflects the movement of a strolling pedestrian as the walk's form responds to the landscape and field constraints. It inflects around the softball field providing optimum views overlooking the field and winds its way through a grove of trees offering further viewing platforms toward Center City. The walk is partly covered with a transparent metal mesh skin in order to visually shield the rail lines and expressway.

In its full build-out, the design will include a series of indoor and outdoor venues requiring a gradual implementation over time, in response to the need for growth and resources on campus.

Four phases of implementation have been identified to complete the design.

PHASE 1

In phase 1, the layout of the Urban Park will be established along with a series of public and private open spaces.

Palestra Green and Franklin Promenade will be completed along with the construction of a new weight training and fitness center in the northern arcades of Franklin Field.

On the former postal parking area, the following amenities will be created:

- Occupying a future development parcel, a surface parking lot will be built along lower Walnut Street to accommodate 300 cars.
- Field # 3 will be a temporary synthetic infill turf field, occupying a future development parcel.
- Field # 1 will be a primary athletic and recreation venue utilizing synthetic infill turf and possibly enclosed with a seasonal-use air structure.
- The softball stadium will host women's softball and recreational users. This stadium is meant to replace the facility south of Rhodes Field.
- Field # 2 is a natural turf public open space that can host a variety of events including recreational sports, concerts, picnics, etc.
- Six outdoor tennis courts will replace the Lott tennis facility in front of the Palestra.
- Field # 4 in this phase will become a natural turf field, occupying the footprint of a future parking garage and athletic facility.
- The Ropes Challenge Course will be erected south of the South Street Bridge in the triangle bounded by the rail lines.

The Paley Bridge will be maintained over SEPTA. 31st Street will be extended south as an access road to the fields, and ending near the tennis courts.

The Weave Bridge across the Amtrak line will be built as the first element in a system of raised walkways, to provide pedestrian access to the Hollenback Center and fields south of South Street.

LANDSCAPE ELEMENTS

- EXISTING BUILDING
- PROPOSED BUILDING/RENOVATION
- ELEVATED WALKWAY
- SPECIALTY PAVEMENT
- LAWN
- SYNTHETIC TURF
- TALL CANOPY TREES
- ORNAMENTAL TREES
- SECURED FENCE
- VEGETATED INFILTRATION SWALE



PHASE I The Palestra Green, Franklin Promenade, and The Urban Park and Fields

PHASE 2

The construction of the Racquet Center to house indoor tennis and squash facilities and the renovation of the Palestra and Hutchinson Gymnasium set the stage for the completion of Franklin Plaza and its welcoming stairs.

East of Franklin Field, a new parking structure will be built for 800 cars, allowing for the construction of six additional tennis courts and the final build-out of Field # 4 on the garage roof.

31st Street will now be extended along the parking structure and will link to South Street.

The “Schuylkill Promenade” – the raised pedestrian walk along the eastern border of the site – will be built to connect to the Weave Bridge and Walnut Street.

LANDSCAPE ELEMENTS

-  EXISTING BUILDING
-  PROPOSED BUILDING/RENOVATION
-  ELEVATED WALKWAY
-  SPECIALTY PAVEMENT
-  LAWN
-  SYNTHETIC TURF
-  TALL CANOPY TREES
-  ORNAMENTAL TREES
-  SECURED FENCE
-  VEGETATED INFILTRATION SWALE



PHASE 2 The Urban Park and Fields, Plaza over SEPTA, Racquet Center and Expanded Tennis Facility over a parking garage east of Franklin Field.

PHASE 3

The first block of mixed-use buildings and the proposed cultural venue at Walnut Street will be implemented according to the Campus Development Plan. Parking will be accommodated in a three-level structure below the Walnut Street level.

The Schuylkill Promenade will be modified to end at the platform of the cultural facility at Walnut Street.

A dramatic pedestrian bridge will extend across the Schuylkill River linking Locust Walk and the Urban Park with Schuylkill River Park and Center City.

LANDSCAPE ELEMENTS

-  EXISTING BUILDING
-  PROPOSED BUILDING/RENOVATION
-  ELEVATED WALKWAY
-  SPECIALTY PAVEMENT
-  LAWN
-  SYNTHETIC TURF
-  TALL CANOPY TREES
-  ORNAMENTAL TREES
-  SECURED FENCE
-  VEGETATED INFILTRATION SWALE



PHASE 3 - The first block of mixed-use buildings and a cultural venue at Walnut Street and a new pedestrian bridge across the river

PHASE 4

In the final stage of development, the additional mixed-use parcels along Walnut Street will be developed in accordance with the Campus Development Plan. Field # 3 and the existing Class of 1923 Ice Rink may be replaced to accommodate additional academic, research or commercial development. New accommodations for ice skating and hockey will be identified prior to the rink's re-development.

LANDSCAPE ELEMENTS

-  EXISTING BUILDING
-  PROPOSED BUILDING/RENOVATION
-  ELEVATED WALKWAY
-  SPECIALTY PAVEMENT
-  LAWN
-  SYNTHETIC TURF
-  TALL CANOPY TREES
-  ORNAMENTAL TREES
-  SECURED FENCE
-  VEGETATED INFILTRATION SWALE



PHASE 4 - Final stage of development

PUBLIC SPACE, URBAN PARK AND FIELDS

PALESTRA GREEN

Along 33rd Street and around the War Memorial, a bosque of formally planted ornamental trees will welcome pedestrians from Locust and Smith Walks and lead them into the heart of Palestra Green. The bosque, an open public plaza, will filter the urban street from the quiet green. It will be a prelude to the actual Palestra Green, a grove of existing and new deciduous canopy trees framing the lawn in front of the Palestra. The grove will create a variety of shaded and sunny places for informal play and leisure. A network of pedestrian walks will provide connections across the green to the Palestra and Hutchinson Gymnasium.

FRANKLIN PROMENADE

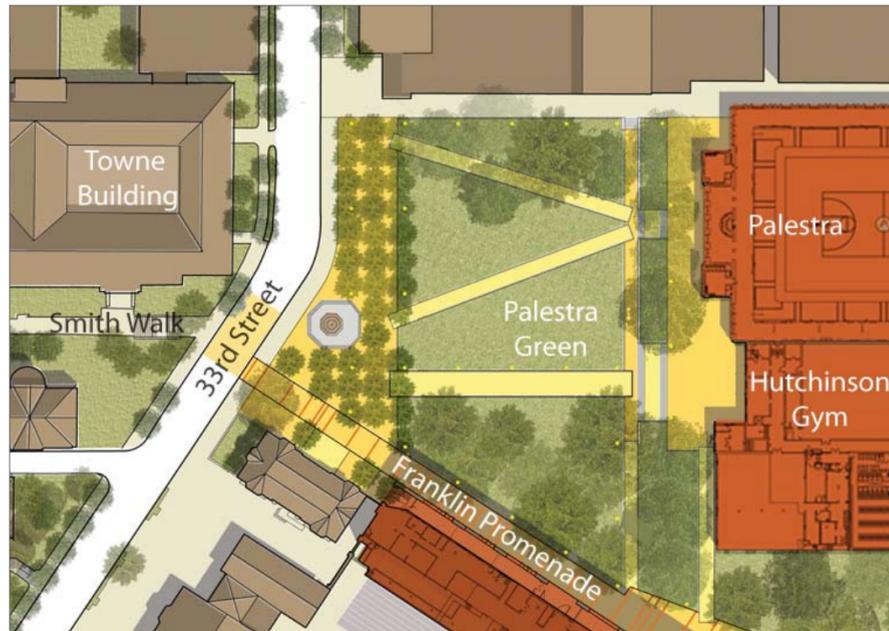
The northern arcades of Franklin Field will be transformed through the insertion of a new weight training and fitness center. Franklin Promenade accommodates this new activity on a spacious walkway along the northern facade, allowing for views into the new facility while accommodating access to Franklin Field events. The Promenade extends the Locust/Smith Walk axis to the east.

FRANKLIN PLAZA AND GREAT STAIRS

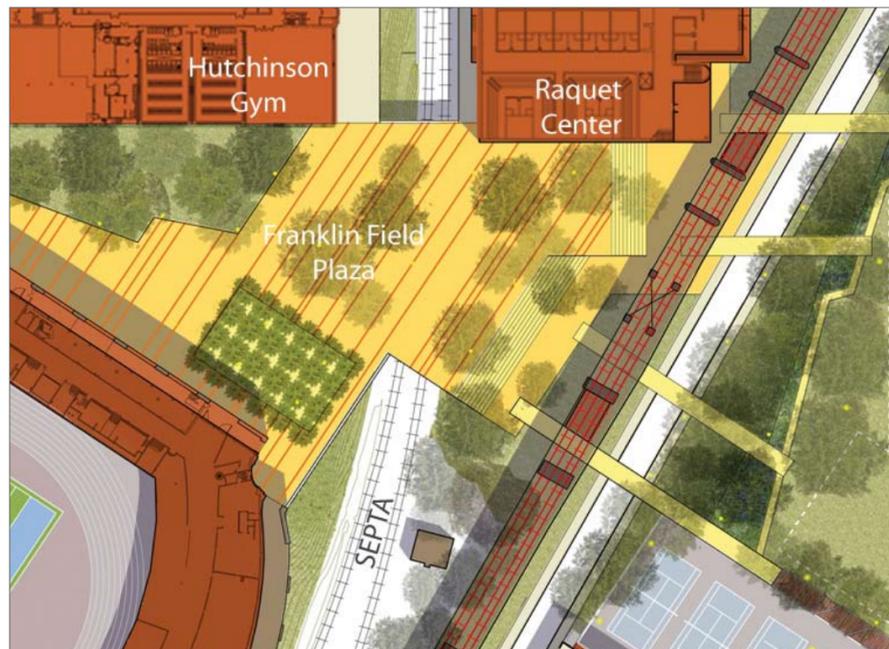
The walkway culminates in a spacious, tree-shaded plaza and a generous flight of stairs which bridges the SEPTA rail line and links the two grades.

The plaza becomes a central gathering place for pre-function tail-gate events at Franklin Field and hosts outdoor dining and retail amenities such as the Penn Relays Carnival.

The stairs create a theater-like condition, providing a stunning view to Center City, underneath the Highline and across the Urban Park to its various activities.



Palestra Green



Franklin Field Plaza



Entry Plaza to sports facilities



New tennis courts and Weave Bridge

URBAN PARK AND FIELDS

URBAN PARK AND FIELDS

The Urban Park east of the Highline and stretching from Walnut Street to South Street features a fabric of tightly interwoven recreation and athletic components.

Formal and informal play fields are framed and subdivided by patches of canopy trees extending the familiar landscape of the campus. The shady environment of the grove allows for relaxation between classes or after a match.

A welcoming entry plaza is situated at the gateway to the fenced athletic sports facilities. It collects the pedestrian flow to the play fields and provides sunny areas to gather around the field entrance. A small entry pavilion, placed in the middle of the plaza, meets the need for ticketing, restrooms and small scale storage.

The grove contains a continuous vegetated swale, collecting, conveying and finally, infiltrating the stormwater runoff of the sports fields and paved park surfaces. Besides its environmental purpose, the swale will be designed to be an aesthetic enrichment of the park.

The Amtrak Northeast Corridor and the Schuylkill Expressway disconnect the park from the river and challenge the site with all of the effects of busy traffic. In order to mitigate these effects, a screening device along the rail lines is proposed. A semi-transparent metal mesh, attached to the raised walk structure, provides visual relief and interest.



The future Palestra Green currently hosts the Lott Tennis Courts



Existing bleachers on the west edge of the courts



An existing brick wall and berm separate the courts from the street

PALESTRA GREEN AND FRANKLIN PROMENADE



Proposed view of Palestra Green and Franklin Field Promenade looking East



Proposed view of the park looking west

CHARACTER OF THE URBAN PARK

The Urban Park combines elements of sports activity with the opportunity for relaxation and informal play.

A vegetated stormwater swale meanders through the park and becomes a visual part of the landscape experience.



Existing view looking west across Bower Field to Franklin Field

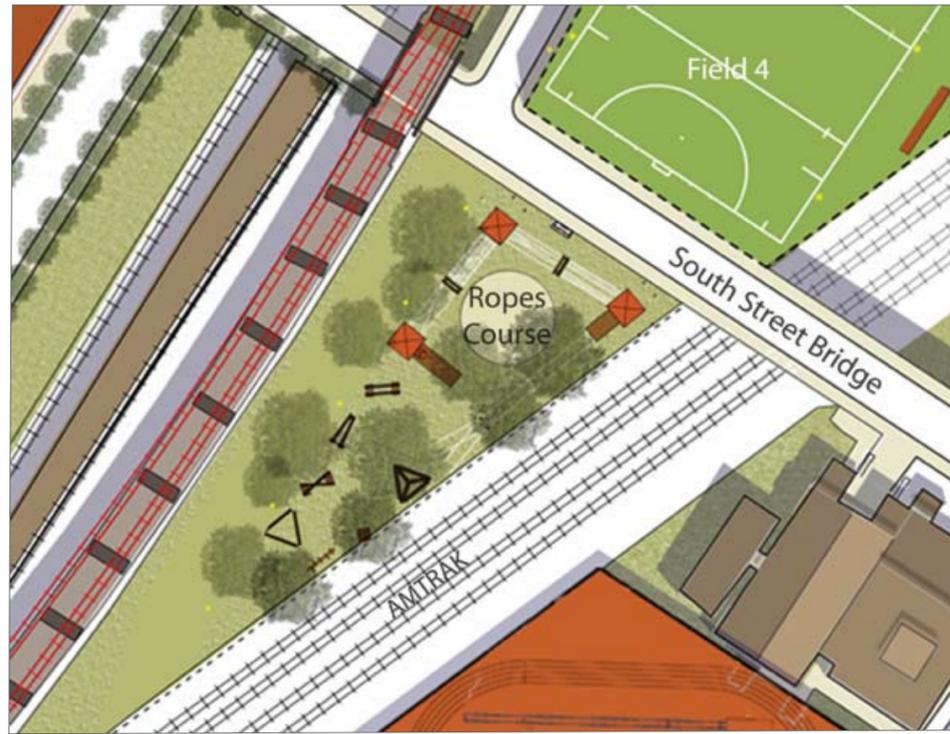


Proposed view of urban park looking north



Existing view looking north across Postal Land Parcel





Proposed ropes course



Example of a ropes challenge course

ROPES CHALLENGE COURSE

As part of the recreational program, a ropes challenge course will be established to foster team development skills. The ropes course consists of two elements - a high course and a low course - both with distinct challenges and degrees of difficulty.

The ropes course will be located in the triangle of land bound by South Street Bridge, SEPTA and Amtrak rail lines.

Combined with trees and visible from the bridge and the SEPTA train station, the ropes course is a unique feature that will create a point of activity at the southern edge of the park.



Field #1 option



Field #3 option

PROPOSED AIR STRUCTURE

During the winter months, the use of outdoor fields is minimal and there is a growing need to provide a climate-controlled venue for indoor sports activity. This venue will significantly increase the length of time for the use of one playing field. The proposed air-supported structure will provide opportunities for multi-purpose use and will energize the park with users at an otherwise quiet time of year.

The plan enlargements illustrate the installation footprint of a conventional air structure over the infilled synthetic turf at

Field #1 or Field #3. The usable area of the field is not compromised under the air structure and the clear playing area is maintained. The Teflon fabric is anchored in an anodized aluminum channel, with cable tiebacks embedded in a concrete-grade beam. The inside of the structure will be artificially lit and may also contain clear roof sections for daylighting. The mechanical equipment to maintain the air structure is located in the southeast corner of the field. There is one main entry vestibule which is handicap accessible, along with six emergency exit doors.



The proposed view of the "Schuylkill Promenade" and athletic fields and plazas looking north. (The rendering depicts artistic representations of potential mixed-use buildings along Walnut Street.)



Existing Conditions View



Proposed view of the air-supported structure at Field # 1 during the winter season. (The rendering depicts artistic representations of potential mixed-use buildings along Walnut Street.)





Exterior view of air-supported structure at Harvard Stadium

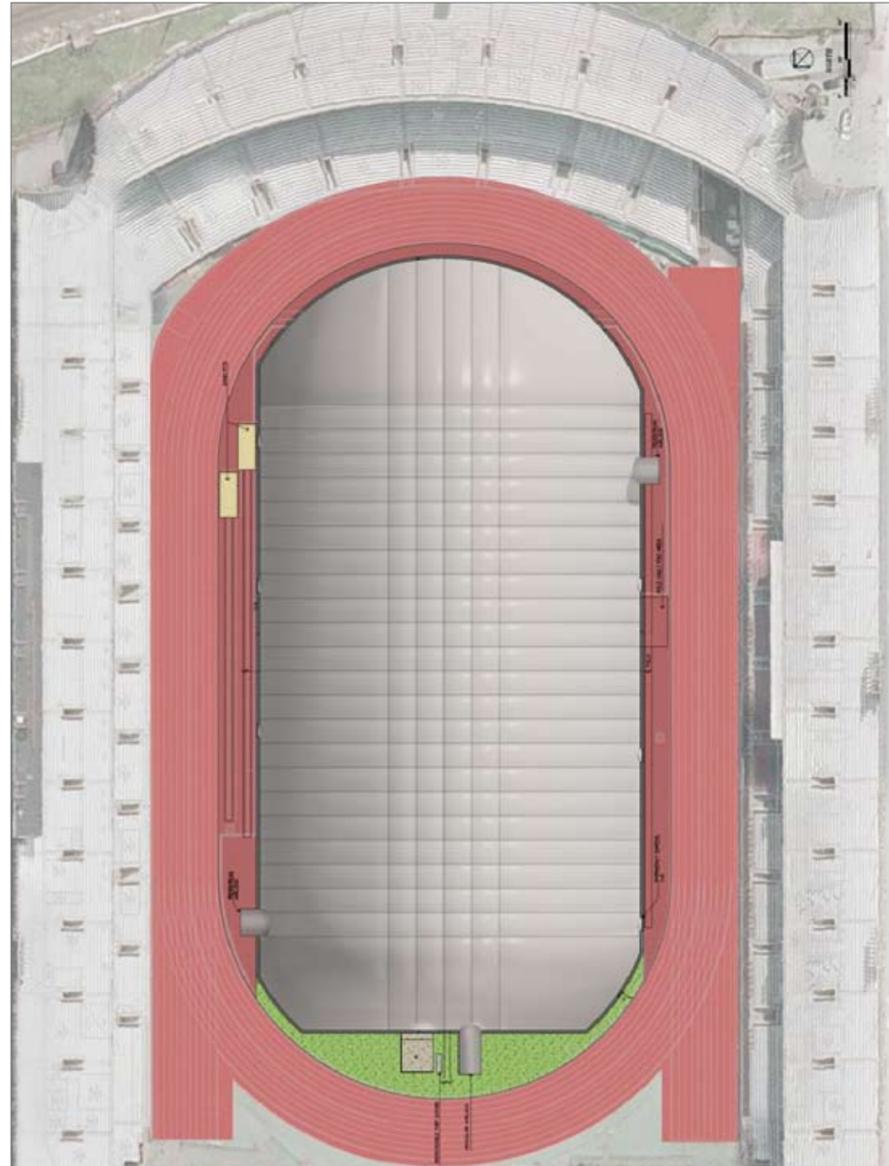


Interior view of air-supported structure at Harvard Stadium

AIR STRUCTURE - ALTERNATIVE LOCATIONS

The aesthetic impact of the seasonal air-supported structure will be significant. In response to this concern, alternate locations were evaluated including Field # 3, closer to Walnut Street and the potential installation inside of Franklin Field.

The Franklin Field location, show to the right, would be similar to the recent installation at Harvard Stadium. However, at Franklin Field, there are unique physical limitations due to the running track and perimeter retaining wall of the grandstands. Also, as the University's venue for all major outdoor spectator sports, the installation period is impacted more than a new field in the Urban Park.



Alternative location of the air-structure in Franklin Field as explored by Geller Sport



Alternative design concept

AIR STRUCTURE - ALTERNATIVE DESIGNS

The size and visual prominence of the air structure within the Urban Park and Field calls for a compelling seasonal landmark. ArupAGU was commissioned to explore possibilities to design a technically smart and aesthetically stunning feature.

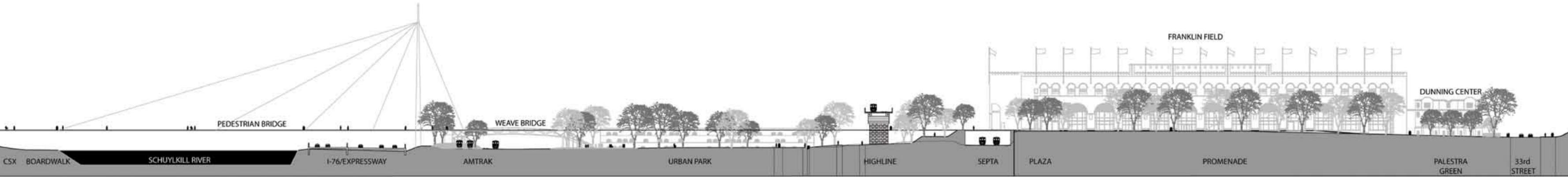
One of ArupAGU's conceptual ideas is to base the air structure on an undulating above-ground steel grade beam, which would also act as a frame for the fencing of the field and would be permanent on the site. During the winter, air beams and a translucent screen would be added to create the enclosed structure. Further analysis and design of alternative aesthetic options for the air structure will need to be evaluated in future phases.



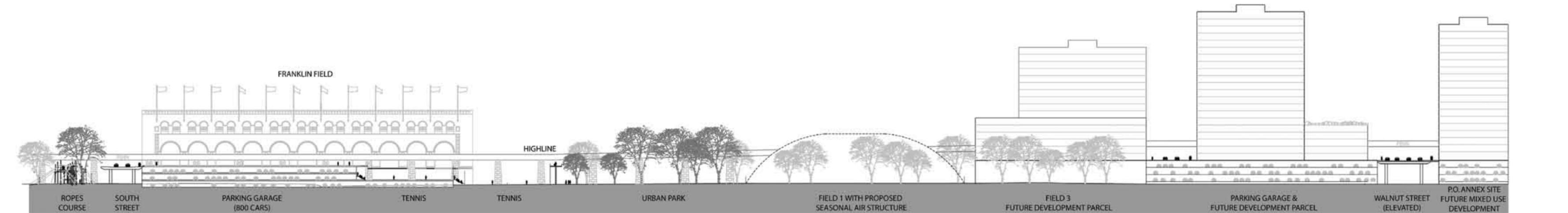
These images depict conceptual representations of potential design for air-supported structure as envisioned by Arup AGU.

SECTIONS

URBAN PARK AND FIELDS



East-West site section, looking south.



North-South site section, looking east.



The Campus Development Plan suggests the following series of elements to enhance connectivity within the campus and beyond:

- A majestic pedestrian bridge, starting at Franklin Field Plaza is proposed to cross the Schuylkill River, from the University to Center City.
- The “Schuylkill Promenade,” a raised walkway along the Amtrak lines will establish a pedestrian link between Walnut Street and South Street, strengthening connections along the river.
- A pedestrian bridge, designed by Cecil Balmond of ArupAGU, will allow pedestrians to cross the Amtrak rail lines to reach the Hollenback Center. Originally conceived as a temporary feature throughout the reconstruction of the South Street bridge, Balmond’s “Weave Bridge” has now become a permanent component of the Urban Park.

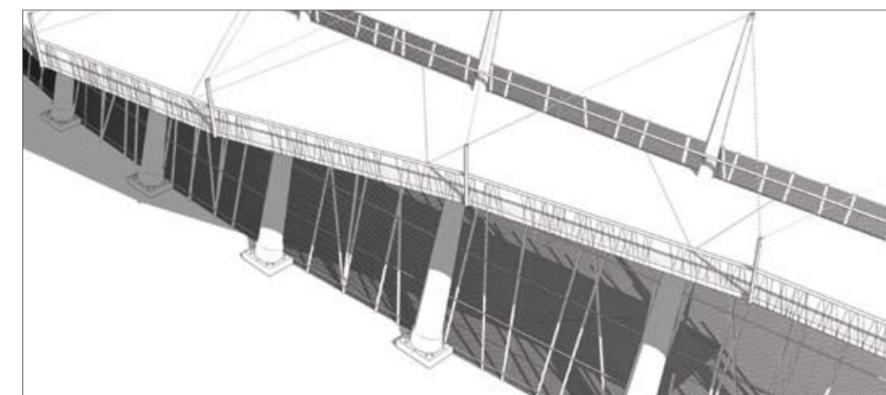
The Promenade will frame the park along its eastern border. Starting at the elevated level at Walnut Street, thirty feet above the park, it meanders around the new softball stadium, gradually sloping down to meet the ground at the public park.



Proposed rendering looking North



Conceptual models of the Promenade



Conceptual view of the Promenade

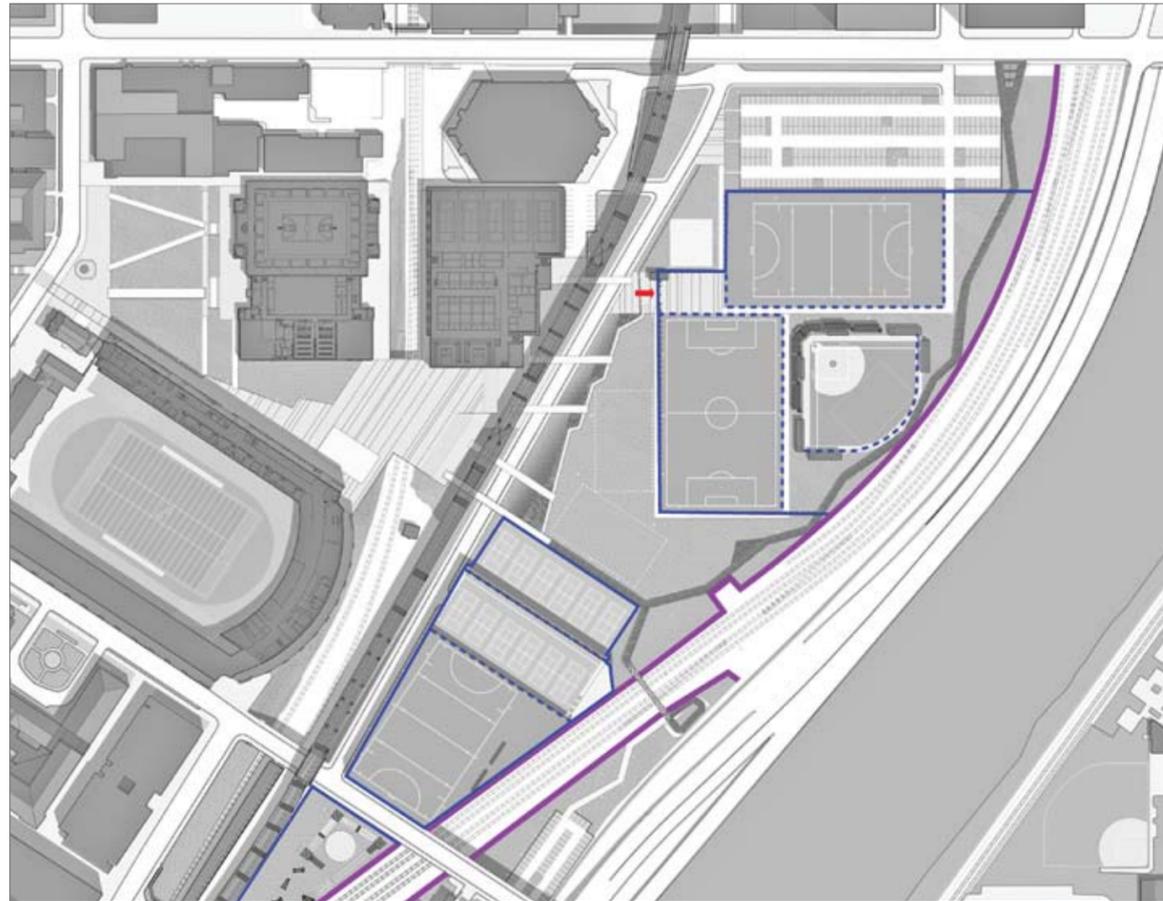
The Promenade will provide a continuous overlook viewing the Urban Park and Fields to the west and to the east, a dramatic vantage point to view the Center City skyline and Schuylkill River.

A semi-translucent metal mesh will partially enclose the raised walk, shimmering in the light and evoking rippling connotations of the river. This subtle reminder of the river’s presence in the park will also soften the visual and acoustic intrusion of the train and expressway.

Unlike the existing vehicular and transit circulation paths surrounding the park which are designed to provide the most direct connections, the Schuylkill Promenade’s sloping and meandering form invites strolling, gazing and gathering.

The timber decking of the Promenade would be gently lit at night by low-level downlighting mounted on the support members.

SECURITY



- SECURE FENCE
- - - SPORTS FENCE
- AMTRAK FENCE

The park will be experienced primarily as an open public area, accessible to the entire campus community. Within the park, certain facilities will need to have controlled access for reasons of security and functionality.

The Softball Stadium, Field # 1 and Field # 3 will be encompassed by one continuous security fence. Along three sides of the area, the fence will consist of an eight-foot-tall metal mesh. The secure area will be completed by the mesh screen of the Schuylkill Promenade.

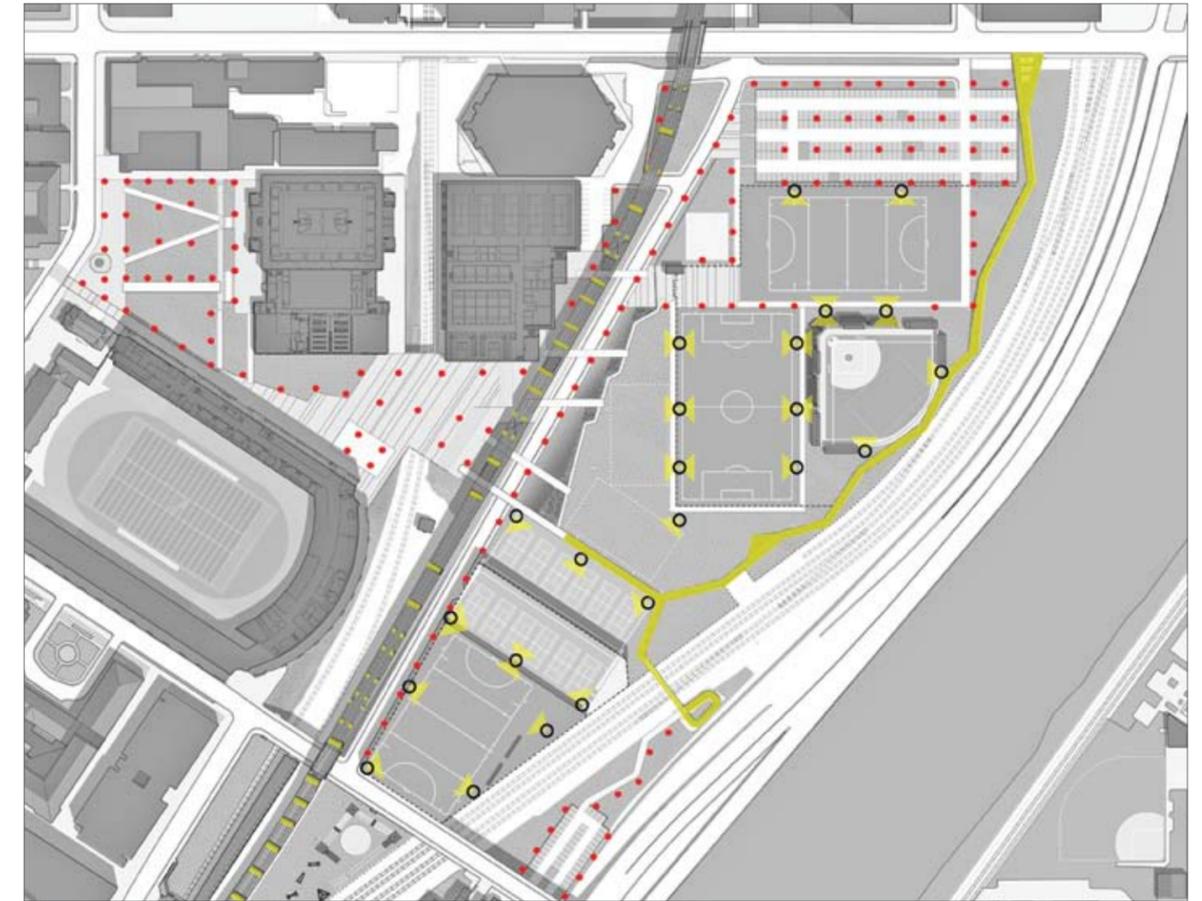
The fenced area will be entered through gates at the Entry Plaza. The plaza extends on both sides of the fence to allow for gatherings within and outside the fence.

The tennis courts and Field # 4 atop the parking garage will also require perimeter secure fencing with internal divided sports fencing.

To the south of the South Street Bridge, the Ropes Challenge Course will also need to be secured.

LIGHTING

- SPORTS LIGHTING
- STREET LIGHTING
- SPECIAL ILLUMINATION



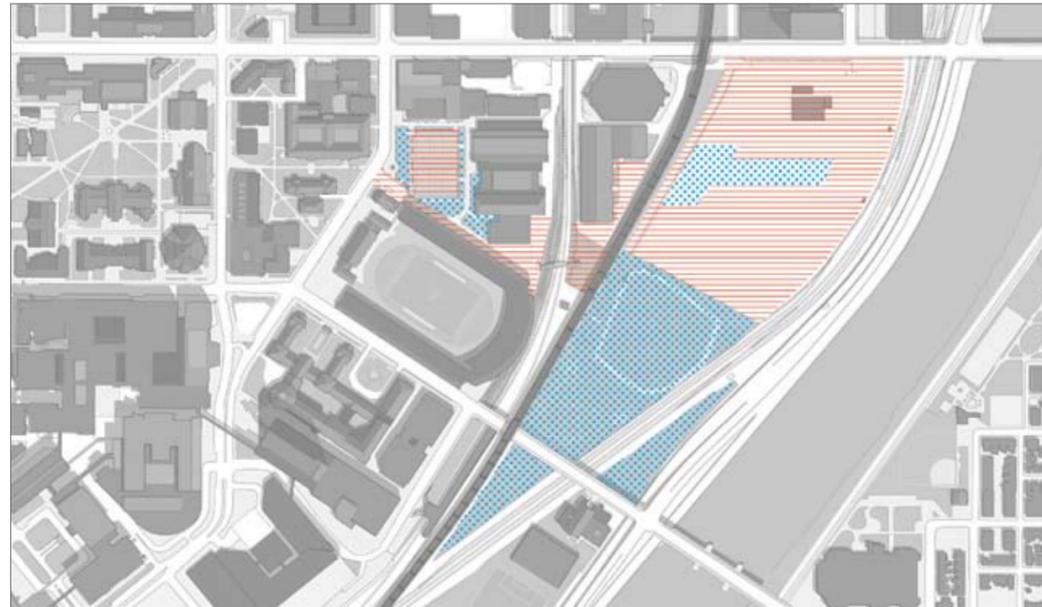
Streets, paths, and groves need to be well-lit to create a safe environment during evening hours. The athletic and recreational play fields require adequate illumination to function. Special features of the park will be accentuated to give the park atmosphere and presence at night.

The two elevated structures which frame the Urban Park - the Highline on the west and the Schuylkill Promenade on the east - both will be staged dramatically through lighting. Floodlights will wash the massive stone piers and steel structure of the Highline.

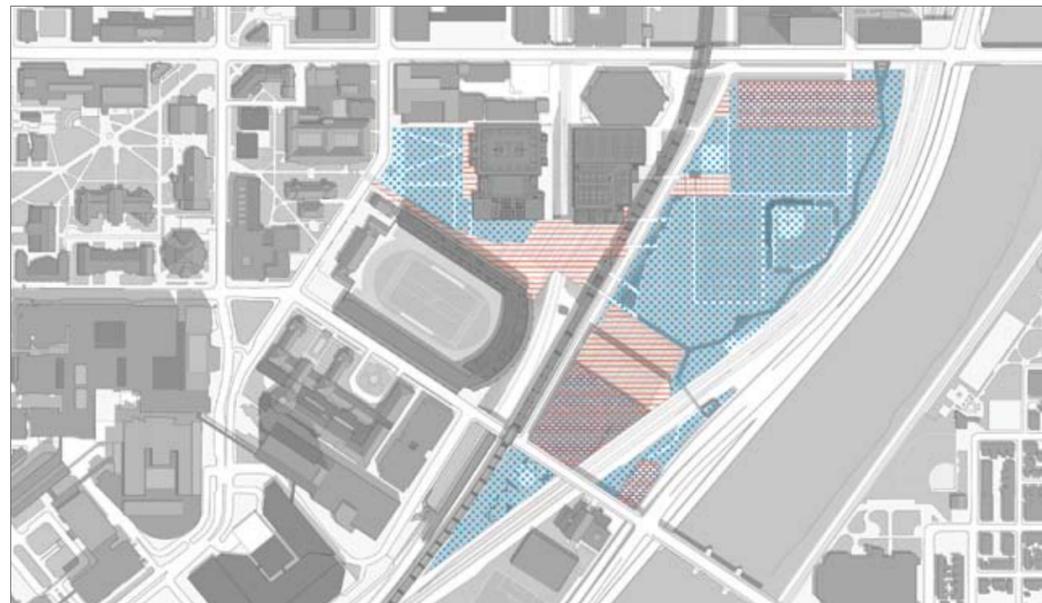
The wooden deck of the Schuylkill Promenade will be suffused with light and appear as a free-floating undulated band. Other elements where special light treatment may be employed include the planter walls within the plaza and stairs and uplighting the bosques of flowering trees, located in the various plazas.

The sustainability discussion to follow will highlight recommended lighting techniques and fixtures.

SUSTAINABILITY



Existing Conditions



Replacement of formerly impervious areas with pervious surfaces: Phase 2

-  IMPERVIOUS SURFACE
-  SEMI-PERVIOUS
-  PERVIOUS SURFACE

URBAN PARK AND FIELDS

The project design aims to achieve leading sustainable design practices to minimize harmful impact on natural resources, and to mitigate existing burdens on the ecosystem.

The new play fields will extend over vast areas of currently hard-paved, derelict surfaces that formerly housed industrial activities.

However, these new fields will be a challenge to be kept well-drained and intensively maintained. Most of their surface area will consist of artificial turf requiring artificial cooling on hot summer days. The sports lighting requirements will be energy-intensive. In addition, 300 surface parking spaces are to be provided in the first phase.

These characteristics raise a series of challenges regarding how to remove the existing pavement material and soil, proactively managing the stormwater runoff from the fields, and creating a sustainable approach for the use of new materials on the site and for mitigating light pollution.

In response to these considerations, five sustainable opportunities have been identified:

1. Demolition and re-use of materials
2. Material choices for new elements
3. Selection of plant species
4. Site lighting
5. Stormwater management

DEMOLITION AND RE-USE

In recent tests of the soil quality, isolated areas of contaminants were found. The polluted soil can be either capped or excavated and replaced. Either way, due to the limited nature of the soil contamination, there is minimal impact on the sustainability strategies listed above.

Based on the soil testing to date, the surface pavement of the 14-acre parcel may be best utilized for re-use as sub-base for the new synthetic turf play fields. The benefits include reduction of waste material to be disposed of, reduction of new drainage material to be imported and the transportation cost and energy required for both.

The process of pavement re-use consists of:

1. Pulverization of the existing hard surface material
2. Shaping the surface to near final grade
3. Mixing an injection of foamed asphalt cement
4. Compaction to final sub-grade

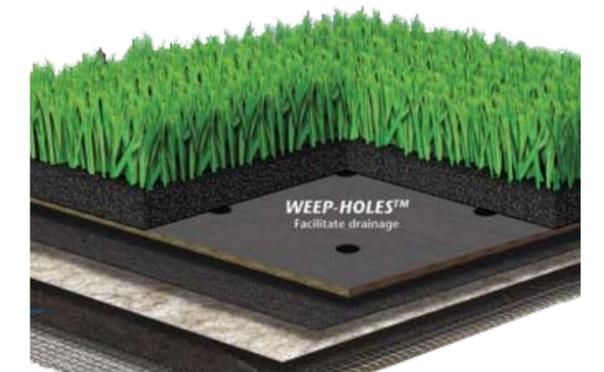
Material Choices

Among the new landscape materials to be used, artificial turf will play a significant role in terms of covered area. The market offers products for synthetic sports fields and running tracks, which include the use of recycled crumb rubber. These products are preferred over conventional materials.

The recommended synthetic turf includes:

1. Polyethylene Fiber
2. Recycled Rubber & Silica Sand Infill
3. Backing consists of permeable woven and no-woven polypropylene fabrics providing strength, stability and vertical drainage

Common manufacturers are Sprinturf and Field Turf. Sprinturf was successfully installed at Franklin Field.



Section of synthetic infill turf

SELECTION OF PLANT SPECIES

The selection of site-adapted tree species is a key component of a sustainable landscape strategy. The selected species will thrive without artificial irrigation, once they are established. They will be resistant to disease, develop robust habit and respond to specific site conditions. Areas associated with temporary flooding due to practices of sustainable stormwater management will be vegetated with tree types from native riparian ecosystems.

Native species, commonly best adapted to the local environment, will be preferred over imported ones.

Invasive species and mono-cultures will be avoided.

The selection of tree species will be informed by the plant recommendations of the Campus Development Plan Manual, created in 2001 by the Olin Partnership.



River Birch, American Sycamore and Tulip Tree are examples of native species

LIGHTING

The concern for excessive light pollution and energy consumption has increased dramatically in the recent past and is receiving greater public awareness.

Many communities are passing legislation to enforce environmentally sound outdoor lighting practices in order to reduce any adverse effect of artificial light including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste.

The market has responded with the development of so-called “dark sky” light fixtures which shine light exclusively downward and use energy efficient sources. The recommendation for the Urban Park is to use dark sky light fixtures for the illumination of all fields and for walkway and street lighting where possible.



Example of a dark sky light fixture for sports fields



Preferred nighttime field illumination

STORMWATER MANAGEMENT

The land area east of the Highline has the potential for 13,000 cubic feet of stormwater runoff during a regular storm event. This volume of water turns the management of site stormwater into a key component of a sustainable design strategy.

At present, about 70% of the Urban Park and Fields area is paved with a mix of impermeable asphalt and concrete. The majority of this area is directly connected to conventional storm drainage systems, providing no opportunity for storage, infiltration, or re-use of stormwater runoff.

The new park design will reduce the amount of impermeable areas by almost 30% throughout Phase 2. Because the reduction exceeds 20%, flood control and channel protection may not be required by the Philadelphia Stormwater Standards. However, water quality and non-structural, site design standards of the Philadelphia Stormwater Standards still apply. Also, the capacity of the receiving storm drains is unknown, so it may be necessary to detain and infiltrate stormwater runoff on-site prior to discharging to the storm drain system.

The design of the new Urban Park addresses these site conditions in an environmentally-sound manner. It aims to maintain as much of the runoff as possible on the site, in order to manage its re-use and infiltration without compromising the usage and flexibility for the park.

The sustainable stormwater strategy consists of several components:

1. Reducing the runoff volume through the use of pervious pavements to promote infiltration and detention of water in the soil,
2. Detaining stormwater in vegetated on-grade depressions,
3. Infiltrating the detained water, after a biological cleaning process in the vegetated swale, directly into the groundwater table, and,
4. Capturing the infiltrated water in subsurface structures with the goal to,
 - Collect and re-use it to reduce the potable water demand for irrigation of grass and watering of synthetic turf areas,
 - Infiltrate the surplus of water with de-celerated speed.

STORMWATER STRATEGY

Stormwater runoff from hard surfaces including the proposed extension of 31st Street, the areas around the Racquet Center and paved plazas will be collected into a narrow bio-retention swale with subsurface storage.

The shallow swale, bordering Field #2 in the adjacent grove of trees, will be planted with ornamental riparian perennials to cleanse the runoff. It will be crossed via a series of raised walkway connections. The swale will attenuate the flows and improve stormwater quality while allowing frequent, small storm events to infiltrate into the ground through its pervious bottom. This system will contain the water quality volume required to treat runoff from these areas. Larger storms may flood the banks of this channel into the grove between swale and the drive, planted with flood-tolerant tree species before being collected into an overflow outlet to the river.

In order to reduce the demand for potable water for irrigation of grass and watering of synthetic turf areas, stormwater runoff from the roof of the proposed Racquet Center and from Field #1 will be collected and stored in an underground retention system. This will include under-drainage from Field #1 in the summer and roof runoff from the proposed air structure over Field #1 in the winter.

The system will be capable of providing all of the anticipated water demands for the irrigation of grass fields during the summer irrigation season and periodic watering of the synthetic turf fields on hot days. These collection and storage areas may have enough capacity to provide water for non-potable building uses, such as toilet flushing, ice rink replenishment, and make-up water for mechanical systems. Overflow from this retention system will be discharged to the storm drainage outlet to the river.



Drainage Swale



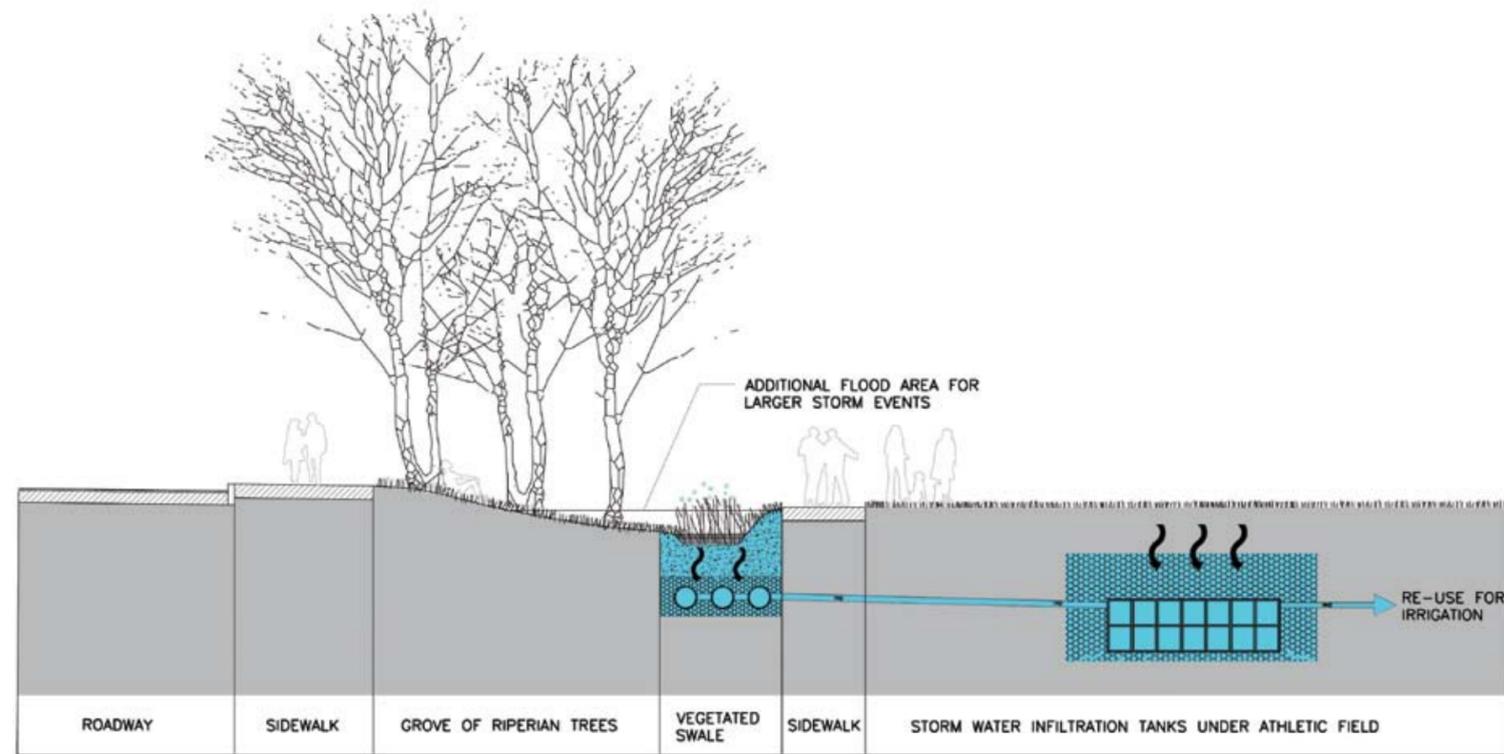
Retention Basin

URBAN PARK AND FIELDS

Runoff from the remaining portions of the site will be collected and treated prior to being discharged to the existing storm drain system. Structural best management practices (BMPs), such as deep sump, hooded catch basins, water quality inlets and infiltration trenches will be used to trap contaminants, reduce runoff and recharge groundwater. The temporary parking area north of Field # 3 will be paved with pervious pavement to reduce the surface runoff from this area and improve storm water infiltration.

It is anticipated that the new buildings will also include green roofs to capture and evaporate the rainfall where possible.

The design of an effective and environmentally responsible stormwater management plan for the site will be an important component of the sustainable design strategy.



URBAN PARK AND FIELDS

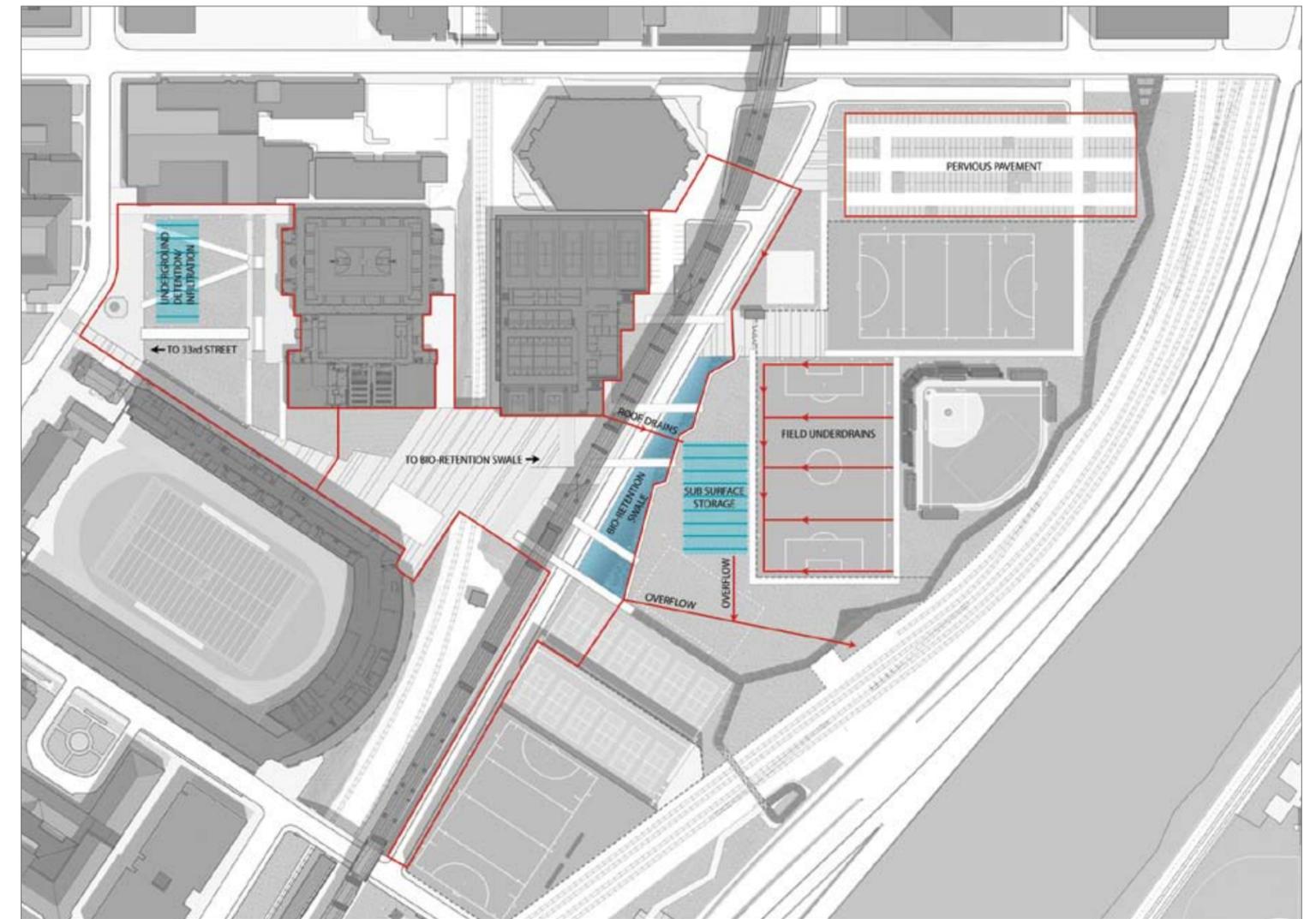


Diagram of Stormwater Collection and Conveyance



1. FRANKLIN FIELD
2. PALESTRA AND HUTCHINSON GYM
3. RACQUET CENTER
4. NATATORIUM
5. INDOOR TRACK

Overview of the new proposal for athletic and recreation facilities

3

Recreation And Athletic Facilities



Historic Aerial View of Franklin Field and the eastern expansion area

INTRODUCTION

Following the completion of the Campus Development Plan, the University requested an alternative study to the multi-purpose field house scheme offered in the Penn Connects report. The alternate concept presented here allows a phased implementation where major program components could be isolated as discrete building projects. The study encompassed the following tasks: incorporating a new Varsity Weight Room and Fitness Center within the northern arcade of Franklin Field; renovating the uses currently housed at Hutchinson Gymnasium and restoring the Palestra; and identifying site and building opportunities for a new Racquet Center combining squash and tennis programs, a new Natatorium and an indoor track.

Sasaki engaged Brailsford and Dunlavey as programming consultants for the exercise to assist in establishing benchmarks for the different facilities as well as confirming the various programs of the Department of Recreation and Intercollegiate Athletics (DRIA).

The combination of these disaggregated program components, along with the Fields and Seasonal Air-Supported Structure discussed in the previous section, will permit an achievable strategy for the expansion of DRIA's facility needs.

WEIGHT TRAINING AND FITNESS CENTER AT FRANKLIN FIELD



Site Plan - Weight Training and Fitness Center at Franklin Field

WEIGHT TRAINING AND FITNESS CENTER AT FRANKLIN FIELD



North Arcade with Parking



Northeast Concourse



Ramp to Lower Level



Concourse Looking west



Existing Conditions at North Arcade of Franklin Field

OVERVIEW AND CONCEPTUAL DESIGN

The long arcade on the northern side of Franklin Field was identified in the Center Campus Development Plan as a potential location for a new Weight Training and Fitness Center. The arcade provides a formal background to Hutchinson Gymnasium, the Palestra, and the Lott Tennis Courts, and will enhance a series of proposed open spaces which are pivotal to the eastward extension of the campus. These spaces are: Palestra Green, Franklin Field Promenade and Franklin Field Plaza. In this proposal, the northern arcade of Franklin Field will be animated by active uses at two levels and will provide a revitalized built edge fronting these new open spaces.

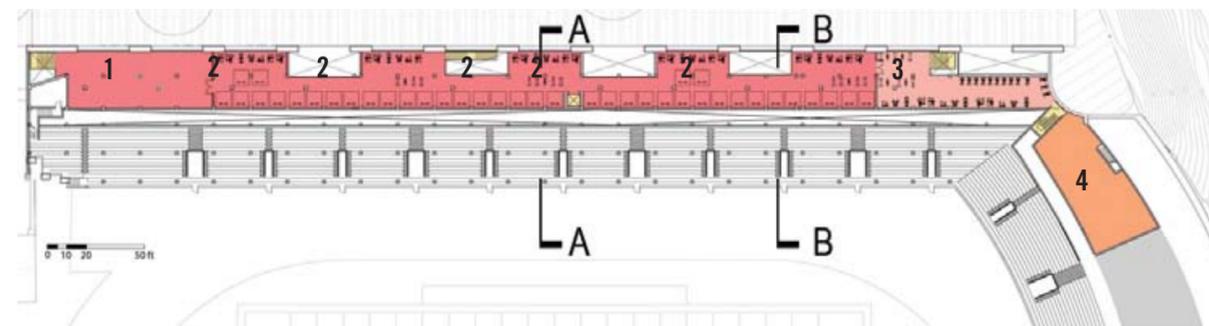
The design proposes an infill of the arcade, inhabiting the space of the arches on two levels and connecting the interior concourse space under the stadium bleachers with the new east-west exterior pedestrian promenade. The existing gates into the stadium concourse will remain in place, helping frame the new uses provided at the ground floor level while allowing a continuous open floor at the mezzanine level.

The proposed plan generally captures the first two bays of the arcade at ground level and at the level above. The new uses: varsity weight room, recreation fitness center, and retail are separated by the existing gates to allow for a greater diversity of programs and users at the ground floor/pedestrian level.

The weight room program is partially accommodated in the center section of the arcade at the ground level. Specifically, a reception area, two offices, a unisex toilet, and cardio fitness equipment are housed here. The majority of the entire upper level houses the remainder of the weight room program including additional cardio equipment, weight lifting stations, and a multi-purpose room to be used for group exercise and training sessions. Splitting the program on two levels showcases the most public aspects of the weight room at ground level and in close proximity to major access points. The mezzanine level will offer greater privacy and a dramatic opportunity for viewing Palestra Green. The area of these weight room spaces is approximately 14,000 SF.



Ground Floor/Concourse Level



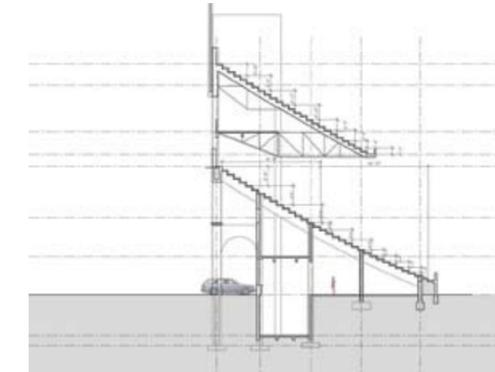
Mezzanine Level

CONCOURSE LEVEL

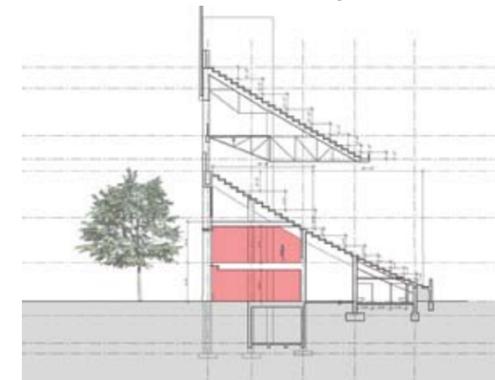
- 1 Retail/Potential Juice Bar
- 2 Athletics Cardio
- 3 Recreation Cardio
- 4 Training Room
- 5 Football & Track Locker Rooms

LEVEL 2

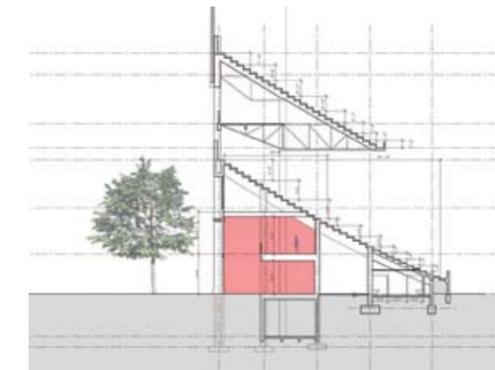
- 1 Multi-purpose
- 2 Athletics Weights
- 3 Recreation Cardio/Weights
- 4 Training Room



Section through north stands (existing)



Section A-A (proposed)



Section B-B (proposed)

The student recreational fitness and cardio program is accommodated at the eastern end of the arcade at ground level and on the mezzanine level. An entry lobby, reception area, and an office provide presence at ground level. Fitness equipment is distributed along both levels. The recreation cardio area is approximately 6,600 SF.

A small retail space of about 1,900 SF completes the build-out at ground level. Possible uses include a food service outlet (juice or coffee bar) and/or an athletics apparel shop.

Spatially, the new program areas will essentially be linear with generous amounts of natural light from the north side. At several locations along the arcade, two-story openings between floors will provide visual and physical connection by means of communicating stairs. Interior finishes will be durable and appropriate to those activities being housed. Areas of strong color will be included to enliven the space and provide visual depth when viewed from the exterior.

Structurally, the design for the new facility will infill over the space currently defined by the pedestrian ramps to the basement level (within the concourse section). The floor area currently occupied by the University Archives will be extended in the form of a new, deeper mezzanine space. Light wells will be carved out at selected locations in the mezzanine slab to provide better visual communication between upper and lower levels.

While the functional gains from the project will be new facilities for varsity athletes and student recreation, the visual impact will be the activation of the historically important iconic stadium façade. The current condition, an unattractive jumble of openings and parking spaces, will be replaced by a glass and metal infill storefront framed within the existing brick arches. Students and athletes working out at the facility will be able to look out to a new campus landscape. Similarly, the action behind the glass will activate the exterior spaces. The change should be particularly apparent after dusk when the glass becomes transparent spilling light into the public open space as the activity beyond becomes visible.



View of recreational cardio and fitness center at the Ground Level



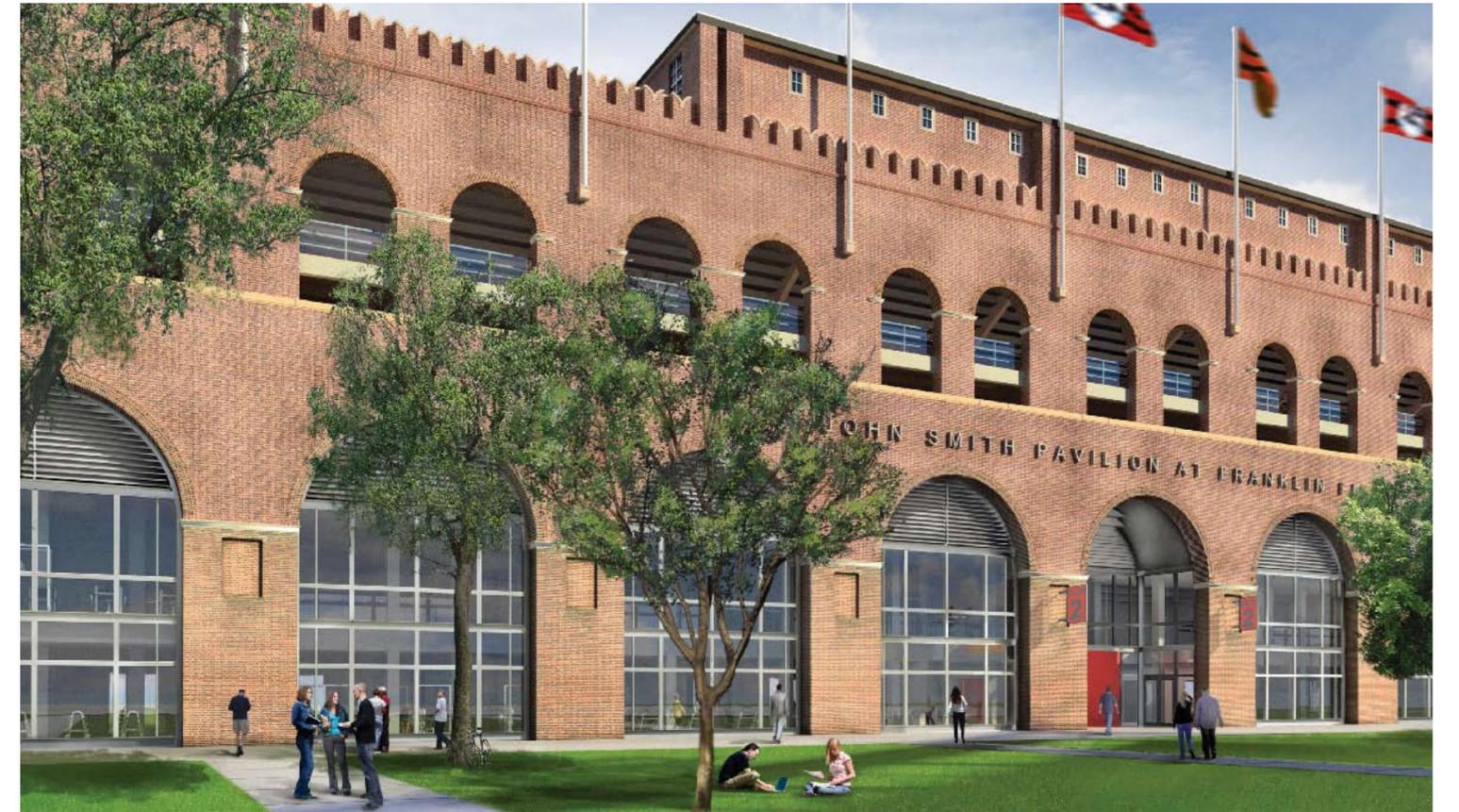
View of existing arcade at Ground Level



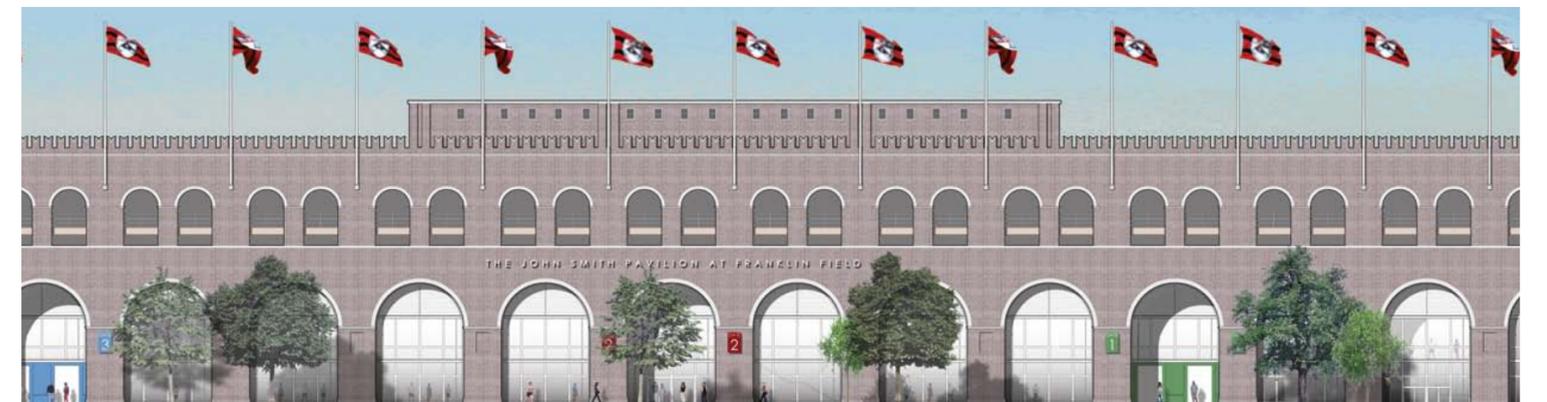
View of Varsity Weight Training facility at the Mezzanine Level



View toward Hutchinson Gym and Franklin Promenade



Exterior View of Arcade



Proposed Elevation



Detailed View from Pedestrian Promenade

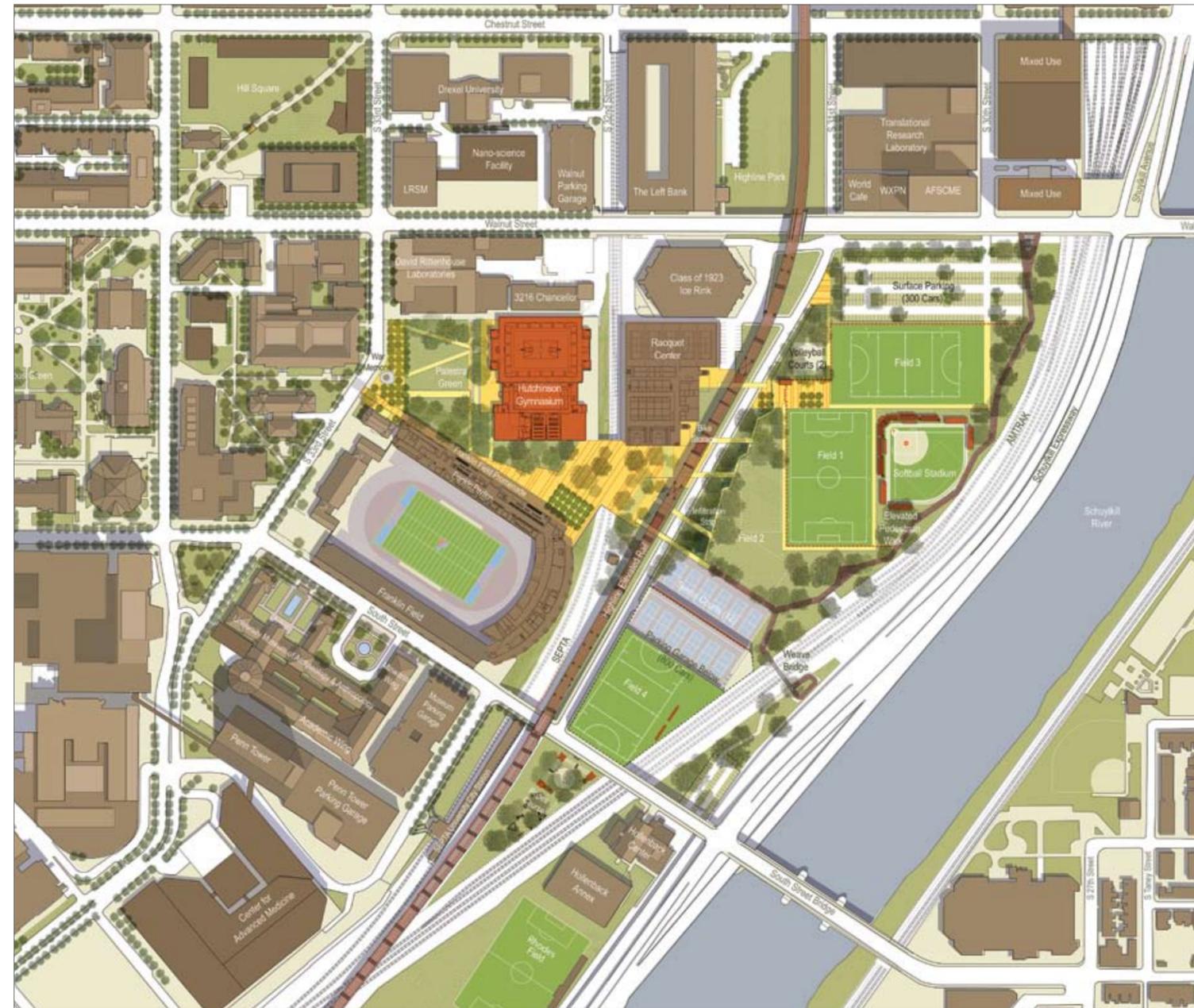


View of Palestra Green and Franklin Field Promenade from 33rd Street



View of Proposed Retail and Multipurpose areas

PALESTRA AND HUTCHINSON GYMNASIUM RENOVATION



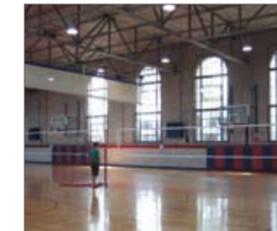
Site Plan - Palestra and Hutchinson Gymnasium Renovation

PALESTRA AND HUTCHINSON GYMNASIUM RENOVATION

VIEW OF EXISTING CONDITIONS



Lower Level lockers



Upper Level Gymnasium



Pottruck Wrestling Facility

OVERVIEW

The Palestra and Hutchinson Gymnasium Complex is a key building in the athletics precinct because of its history, location and program. Two options for renovation are outlined here; one with minimal intervention and a second of broader scope.

In either case, as part of the Campus Development Plan, the existing Ringe Squash Courts attached to the south elevation of Hutchinson will be demolished once the new Racquet Center is constructed. The resulting exposed façade will be restored to its original configuration with a restoration of the brick exterior and large arched windows. At the west façade the vestibule and foyer spaces will be renovated to varying degrees in each option.

OPTION 1 PROPOSED WORK

General

- The goal of Option 1 is a minimal renovation. Lighting, heating and cooling, fire protection, fire alarm, telcom, etc. will be relocated or added only as necessary.
- The level and type of finishes of the recently renovated wrestling area would be used as a benchmark for the type of materials and finishes to be used throughout the renovation.

Basement Level

- Crew rowing tanks remain in existing configuration.

Ground Floor

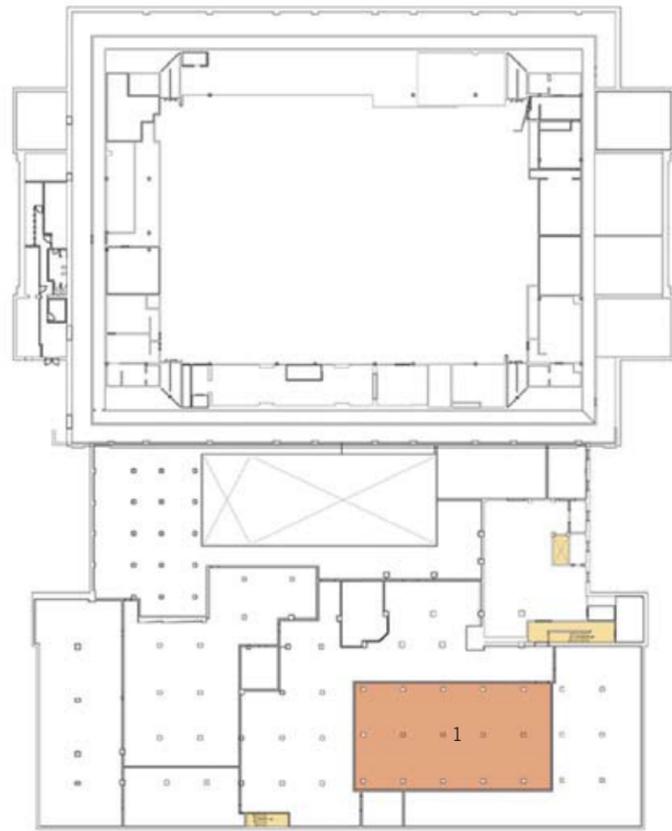
- **Gymnastics:** The existing swimming pool (now closed) will be converted to a new gymnastics facility (5,760 SF). The existing pool tank will be partially infilled allowing pits to be formed within the pool area. New finishes will be installed throughout. The exposed steel roof trusses and roof monitors will be restored. The spectator bleacher seats will remain.
- A small lift will be installed to provide an accessibility entrance at the west elevation.
- A new corridor will be cut through former locker rooms allowing a clear East-West circulation route through the building.
- The fencing facility will be renovated and expanded by utilizing some of the existing locker area.

Second Floor

- The relocation of the gymnastics program will allow two basketball courts to be returned to recreational use. Two full size basketball courts can be overlaid over the four recreation size courts to accommodate varsity team practice.

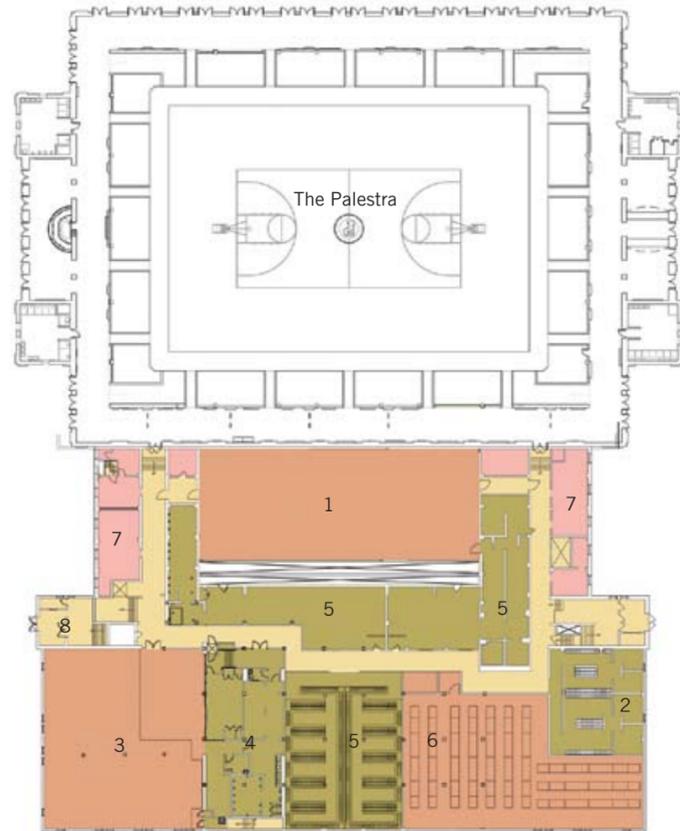
Third Floor

- The current mezzanine viewing space will remain.



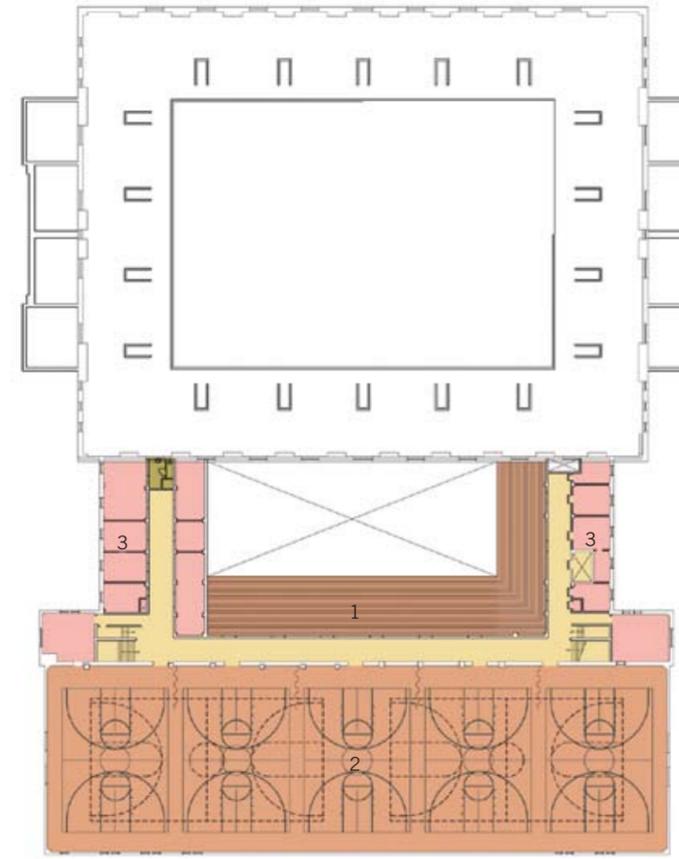
OPTION I Basement

1 Crew Tanks



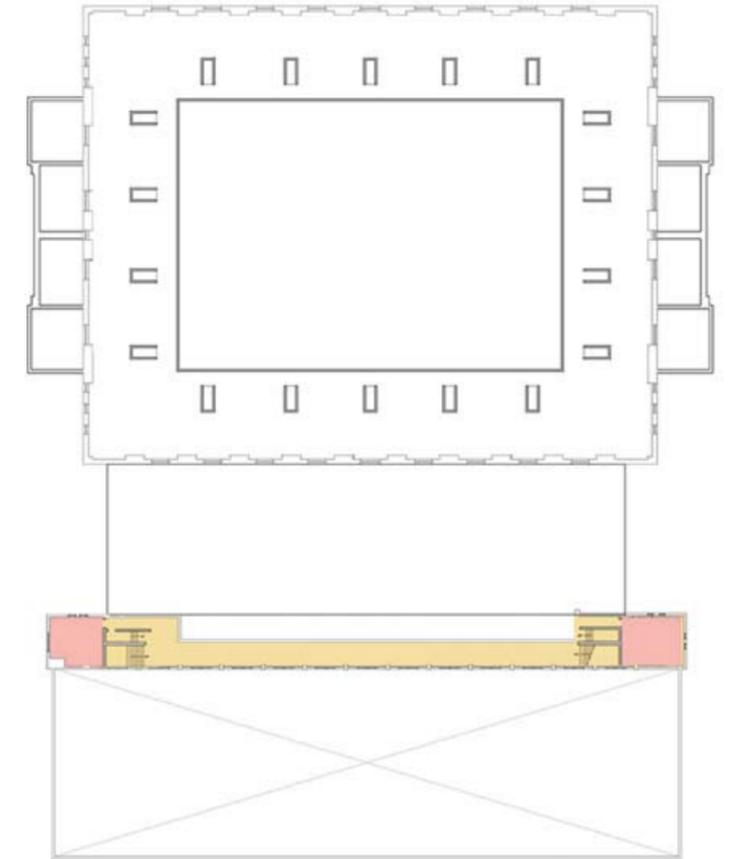
OPTION I Level 1

- 1 Gymnastics
- 2 Fencing & Gymnastics Lockers
- 3 Wrestling
- 4 Wrestling Lockers
- 5 General Lockers
- 6 Fencing
- 7 Offices
- 8 Existing Entrance and Security Station



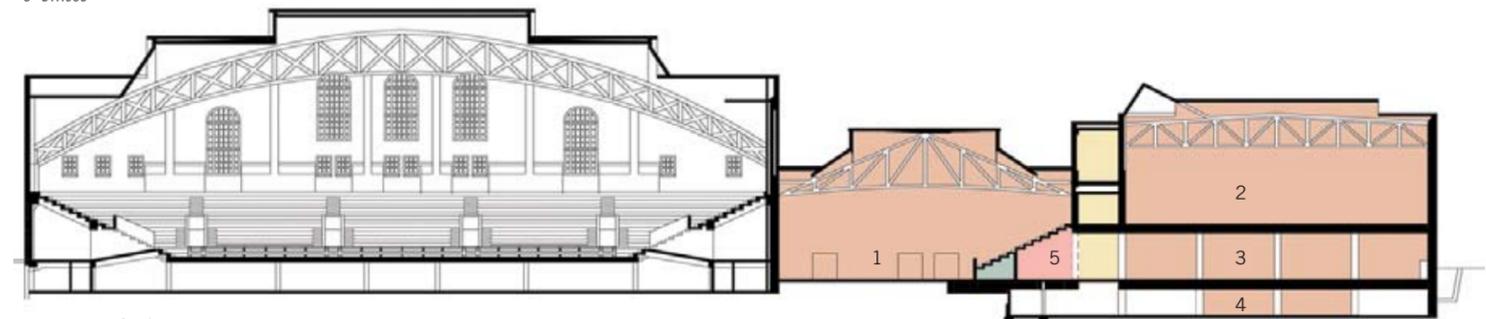
OPTION I Level 2

- 1 Spectator Seating
- 2 Basketball Courts
- 3 Offices



OPTION I Level 3

Viewing Mezzanine



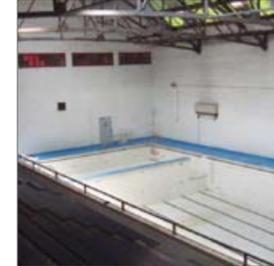
OPTION I Section

- 1 Gymnastics
- 2 Basketball Courts
- 3 Wrestling/Fencing/Lockers
- 4 Crew Tanks
- 5 Offices



View of Proposed new entrance for Palestra and Hutchinson Gymnasium

VIEW OF EXISTING CONDITIONS



Hutchinson Pool (closed)



Crew Tanks



Gymnastics Facility



Fencing Facility

OPTION 2 PROPOSED WORK:

This option is a more extensive renovation than Option 1. It assumes a new entrance, leveling the floor of the lobby, adding a new elevator, an expanded gymnastics area, and reconfiguring the lockers and showers. Lighting, heating and cooling, fire protection, fire alarm, telcom, etc. will all be improved to contemporary standards.

Basement Level

- Crew rowing tanks (4,000 SF). Tanks will be rebuilt with renovated plumbing and new finishes throughout.

Ground Floor

- A new accessible entrance will be created in the link between the Palestra and Hutchinson Gymnasium. One concept for the entry would feature a glass pavilion, deferring to its historic neighbors, while signifying the rebirth of this important recreation and athletic complex.
- A new reception/administrative area will be created at the new entrance. The floor of this space will be elevated to meet the floor elevation of the adjacent Palestra level allowing for a greater connection between the buildings and opportunities for shared use of the two facilities.
- Main circulation and egress stairs at the east and west sides of the building will be rebuilt within their existing volume in order to connect all floors and to comply with current code requirements.

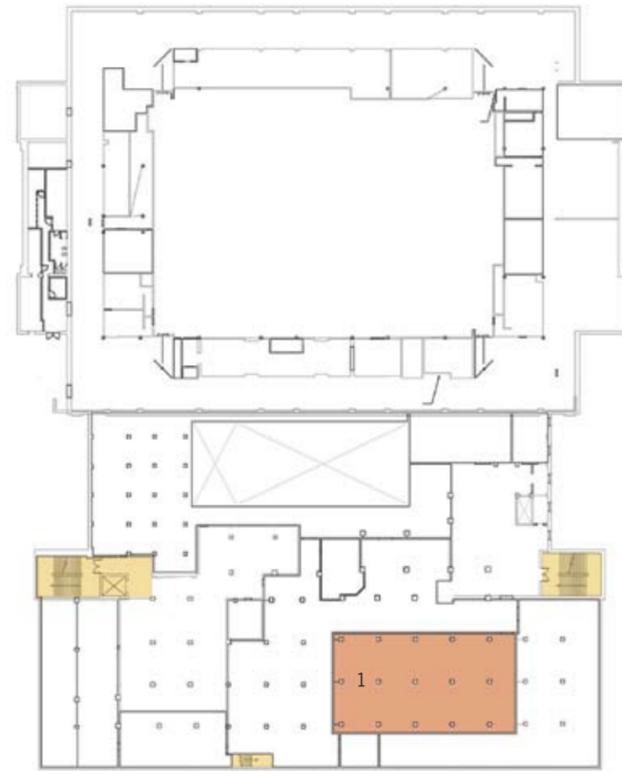
- A new elevator will be constructed at west side near the renovated stair, permitting full accessibility to all floors.
- The existing swimming pool area will be converted to a new gymnastics facility (8,500 SF). The existing pool tank will be partially infilled allowing pits within the pool area. New finishes will be installed throughout. The exposed steel roof trusses and roof monitors will be restored. The spectator seats will be demolished on the south side to increase the gymnastics floor area seating will remain on the east side.
- A new fencing area will be created by recognizing the adjacent locker rooms and showers.
- A new central locker room and shower facility will be created with contemporary amenities and finishes.
- A new main corridor will be created allowing a clear east-west circulation route through the building.

Second Floor

- The relocation of the gymnastics program will allow two basketball courts to be returned to recreational use. Two full size basketball courts can be overlaid over the four recreation size courts to accommodate varsity for team practice.

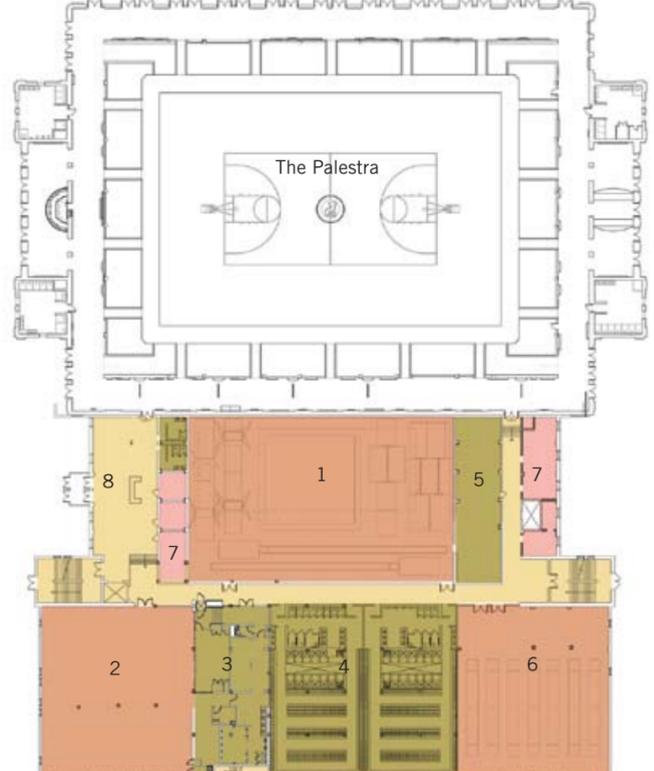
Third Floor

- The current mezzanine viewing space will remain.



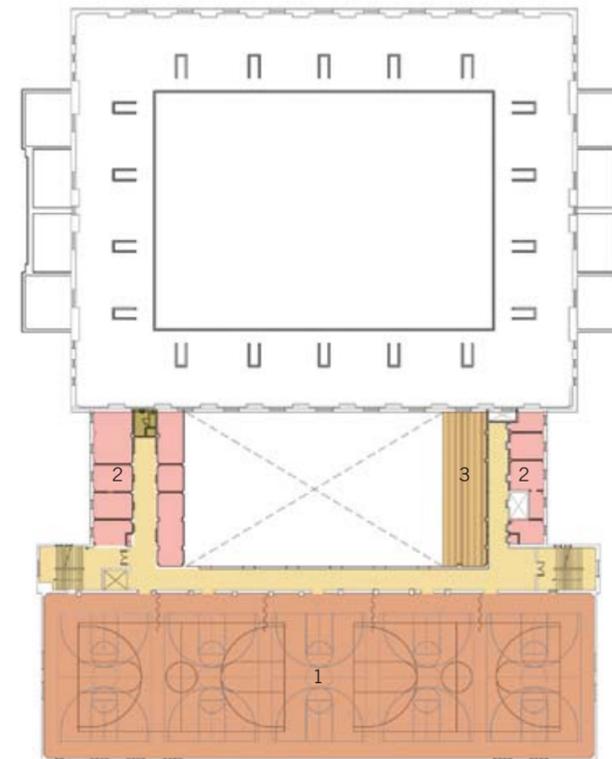
OPTION 2 Basement Level

- 1 Crew tanks



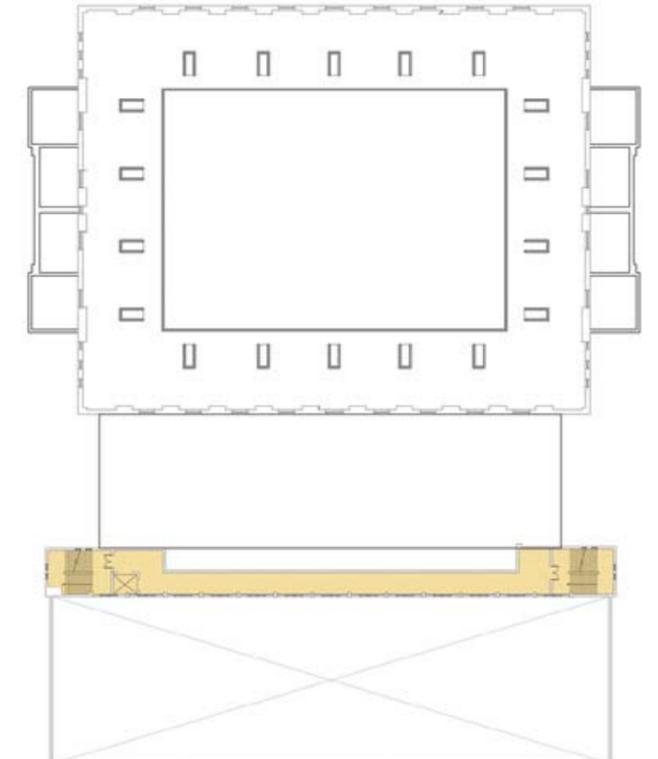
OPTION 2 Level 1

- 1 Gymnastics
- 2 Wrestling
- 3 Wrestling Lockers
- 4 General Lockers
- 5 Team Lockers
- 6 Fencing
- 7 Offices
- 8 New Entrance and Reception/Security Station



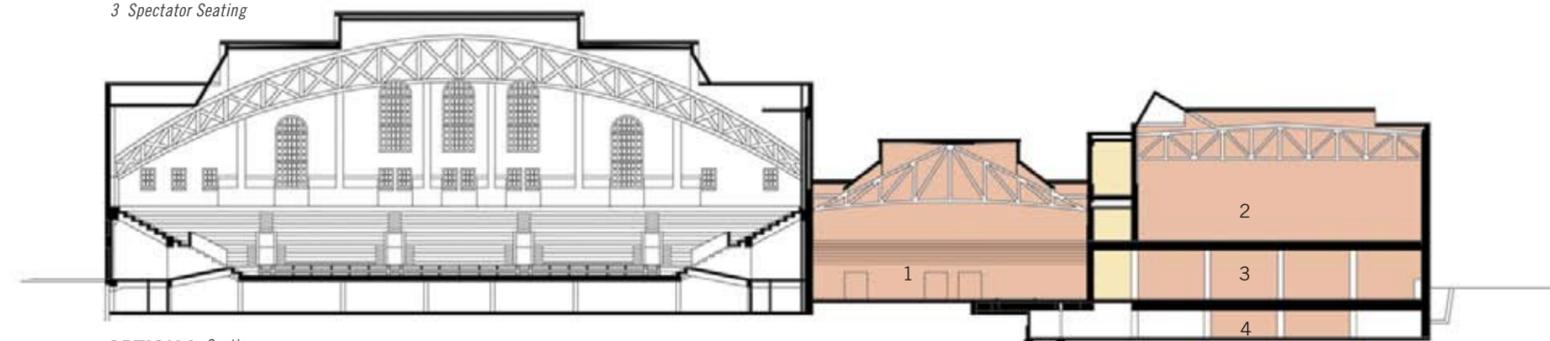
OPTION 2 Second Floor

- 1 Basketball Courts
- 2 Offices
- 3 Spectator Seating



OPTION 2 Third Floor

- Viewing Mezzanine



OPTION 2 Section

- 1 Gymnastics
- 2 Basketball/Volleyball
- 3 Wrestling/Fencing/Lockers
- 4 Crew Tanks

RACQUET CENTER



Site Plan - Racquet Center, Option 1

RACQUET CENTER

OVERVIEW AND DESIGN INTENT

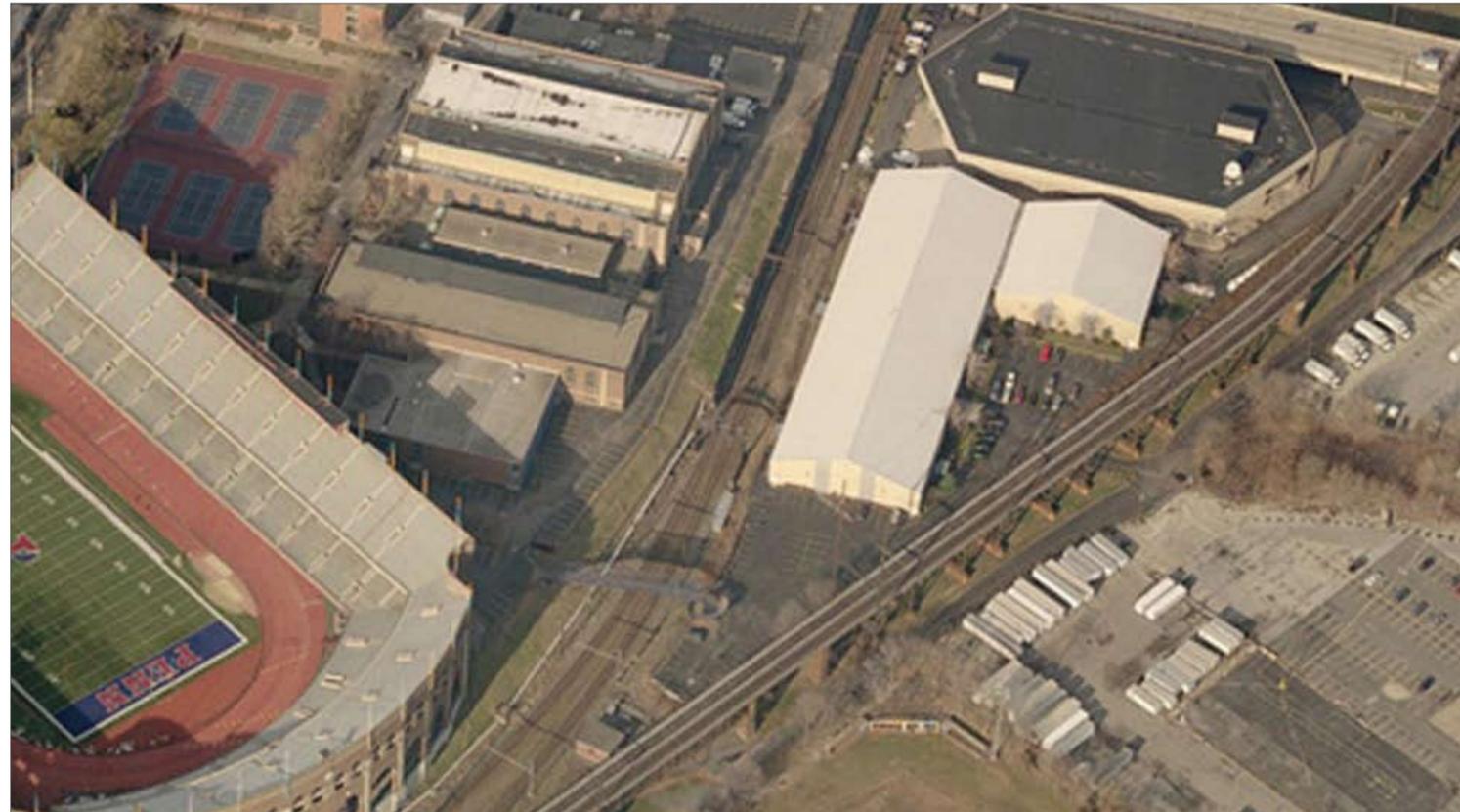
The Racquet Center will be constructed on the same site as the existing Levy Tennis Pavilion. The landscape design and site work will integrate the facility into the new playfield area as well as the new pedestrian promenade between Hutchinson Gymnasium and the north arcade of Franklin Field.

Both tennis and squash facilities will have dedicated entrances from the upper pedestrian promenade and the lower athletic fields. The dual entrances would allow for discrete name recognition for both programs while allowing for internal connections.

The Racquet Center is envisioned as a club-like setting serving Penn students, varsity athletes, faculty, staff and alumni. The basic program includes nine tennis courts with provision for 800-900 spectators and seventeen international size squash courts with provision for 200 spectators at each of two glass exhibition courts. Both Tennis and Squash programs will have male and female locker/shower/toilet and support areas. The gross area of the facility is approximately 122,300 GSF.



View of the Levy Tennis Pavilion from across the SEPTA tracks



Aerial view of existing Levy Tennis Pavilion



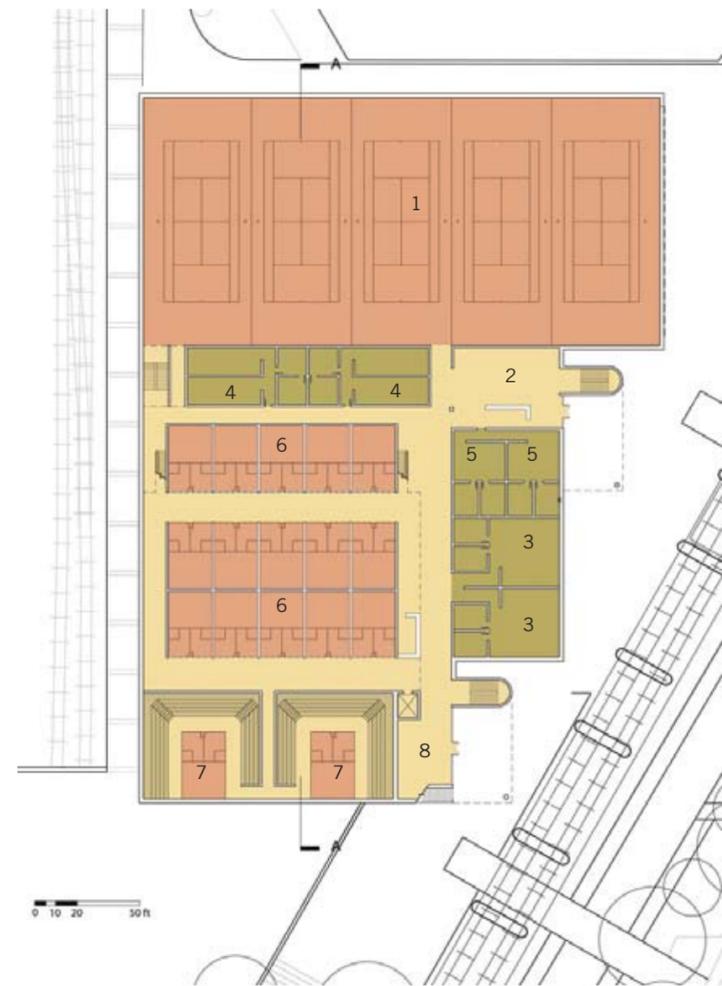
Aerial View of proposed Racquet Center, Franklin Plaza and adjacent open spaces

OPTION 1

The proposed racquet center is split into two levels, concentrating the full squash program at ground level together with five tennis courts, their reception and support facilities. The remaining four tennis courts are built above the squash program. These courts are open to the other tennis courts in a split level arrangement and are visually and programmatically linked. The proposed massing of the building features simple rectilinear volumes that follow the grade change of the existing terrain from east to west, expressing the sectional split of the program and reflecting the building's interior functions. The simple massing could be crowned by an articulated roof surface featuring light monitors

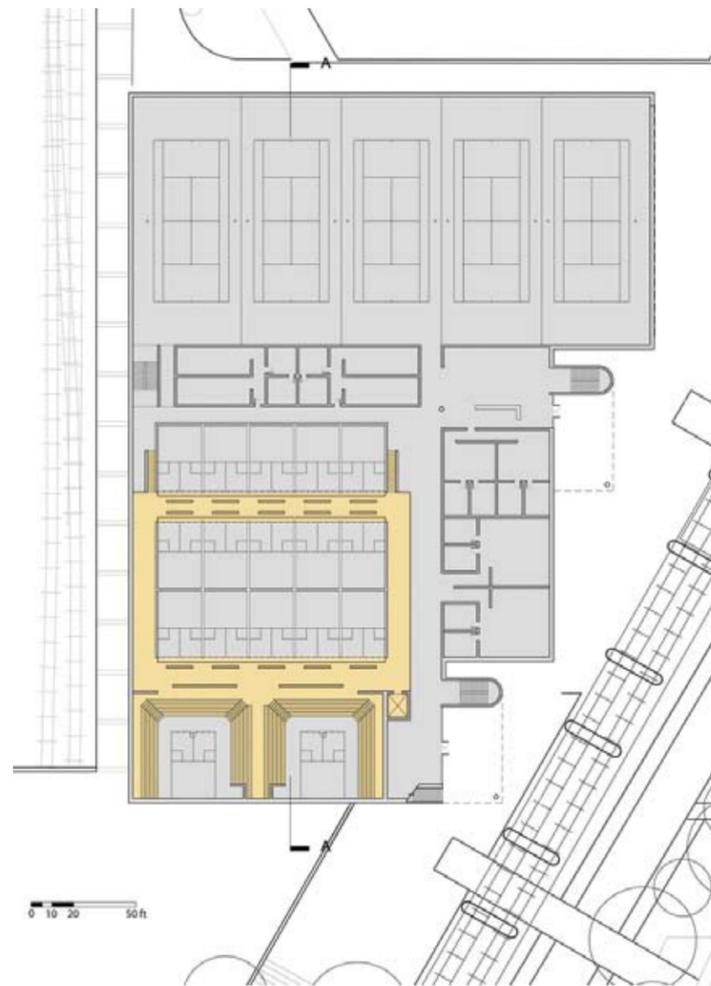
harvesting northern light while echoing the roof monitors of the Palestra and Hutchinson Gymnasium. The roof profile could be a visual signature element identifying the facility from a distance. Additional window openings and translucent glazed panels would be incorporated in areas where natural light and glare will not impact the competition spaces.

The proposed translucent façade in conjunction with the clerestory lighting will give the building a glowing aspect that would make it both a destination from the fields, and a landmark of the campus as seen from Walnut Street and from Center City.

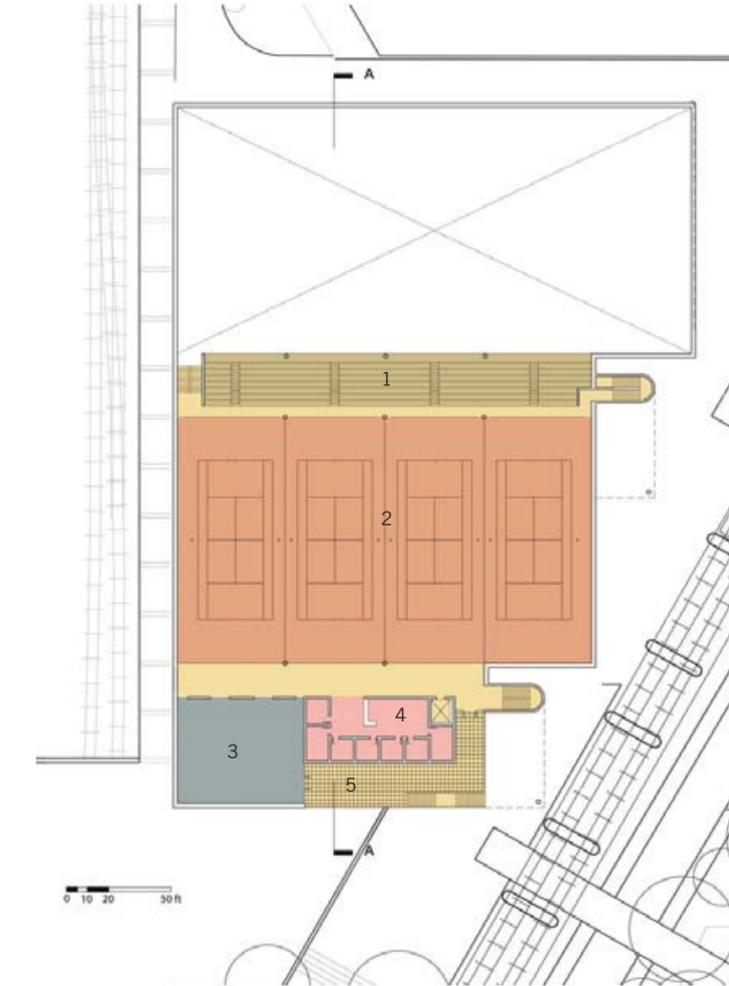


LEVEL 1

- 1 Tennis Courts
- 2 Tennis Center Entrance
- 3 General Lockers
- 4 Team Lockers
- 5 Executive Lockers
- 6 Squash Courts
- 7 Competition Squash Courts
- 8 Squash Entrance

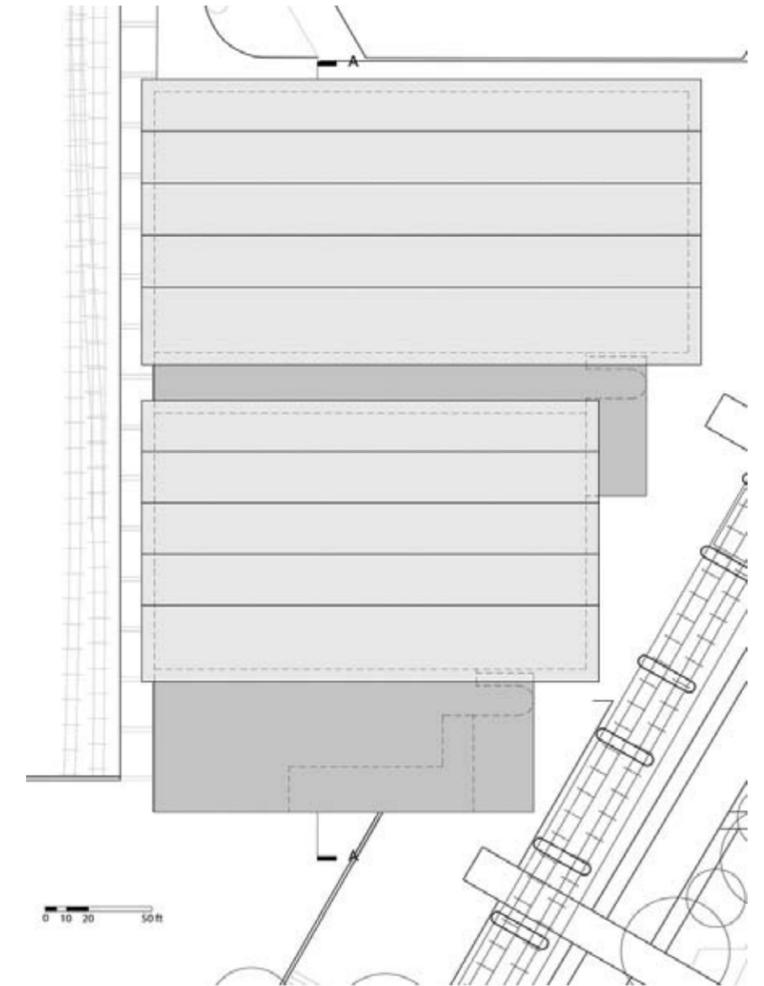


LEVEL 1 Mezzanine



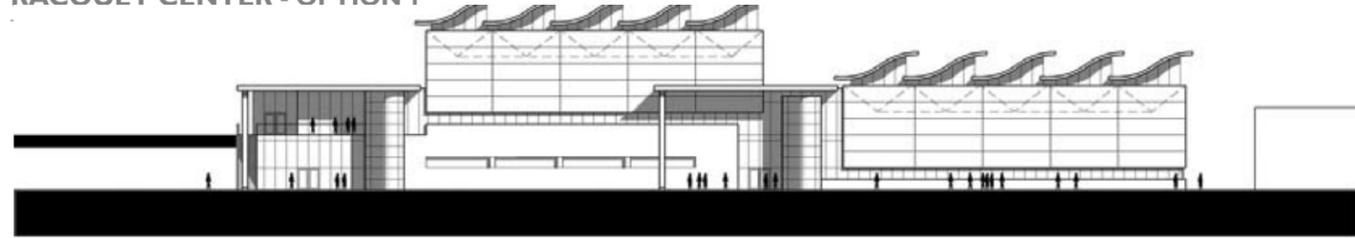
LEVEL 2

- 1 Spectator Seating
- 2 Tennis Courts
- 3 Executive Lounge
- 4 Offices
- 5 Terraces

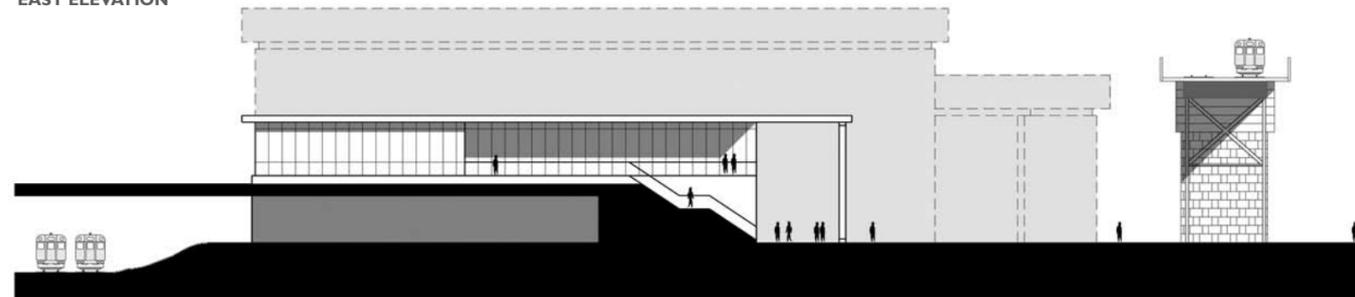


ROOF

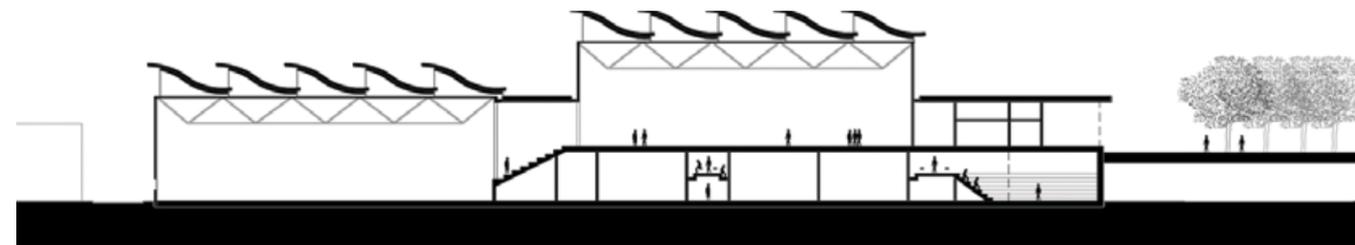
RACQUET CENTER - OPTION 1



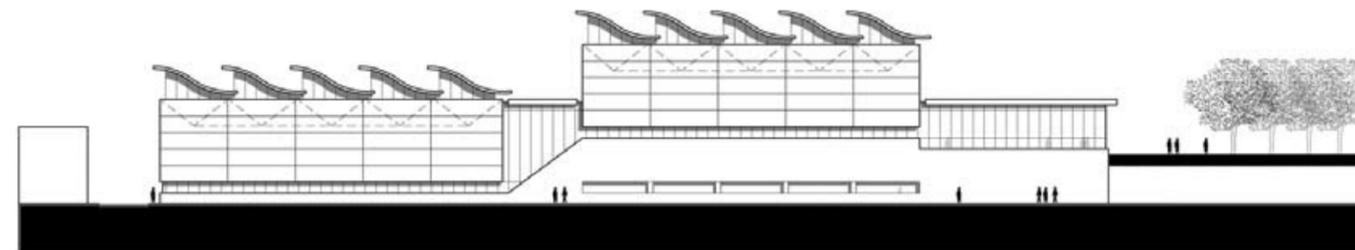
0 10 20 50 ft
EAST ELEVATION



0 10 20 50 ft
SOUTH ELEVATION



0 10 20 50 ft
SECTION



0 10 20 50 ft
WEST ELEVATION

RACQUET CENTER - OPTION 2

OPTION 2

This alternative Option for the Racquet Center consolidates the majority of the program on the southern portion of the Levy site in a densely stacked configuration. The benefit is retaining the northern portion of the site for future expansion of tennis courts or as a potential pool site.

The ground floor provides entrance to the Tennis Center from outdoor parking, three tennis courts, and two competition squash courts with spectator seating. There is a lounge area and male and female lockers and support areas for students, faculty and staff, men's and women's varsity teams, and alumni.

The next level, accessible from the upper plaza, provides the Squash Center entrance, lounge, and administration. Thirteen squash courts are accessed from this level. Spectator seating for the three ground level tennis courts is located at this level.

A mezzanine level provides an elevated viewing area at the rear of each squash court.

The highest level provides five additional competition tennis courts with spectator seating.

Option 2 is potentially a two-phase scheme with the flexibility to expand the Racquet Center at a future date. While the massing for this option differs in height from Option 1, the architectural character of the building could be consistent with that of the previous options.

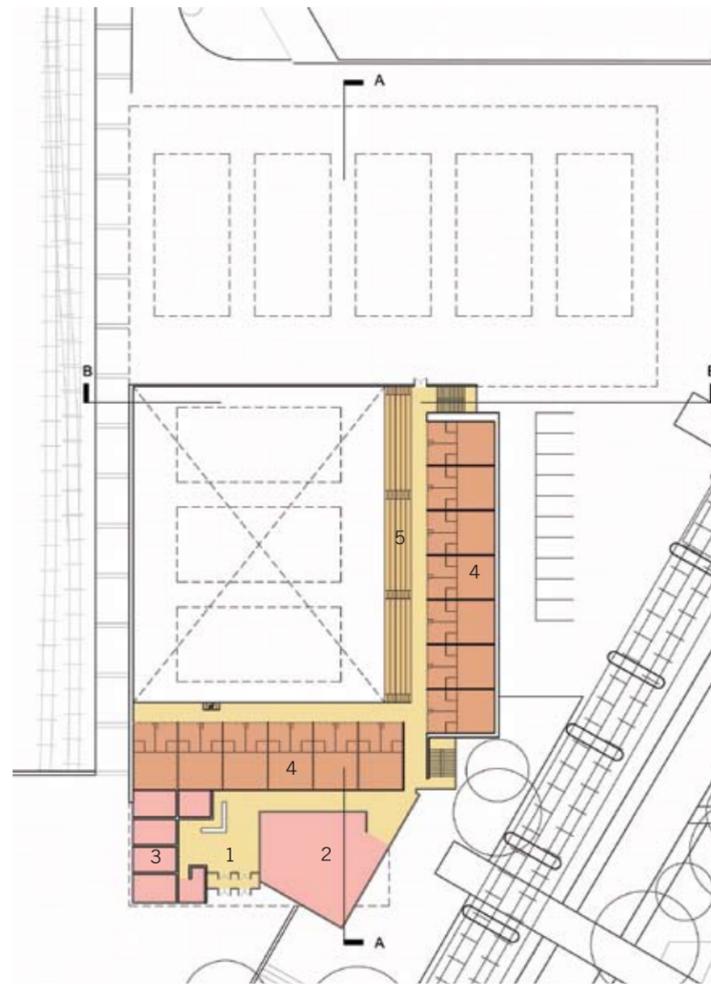


Site Plan - Racquet Center, Option 2



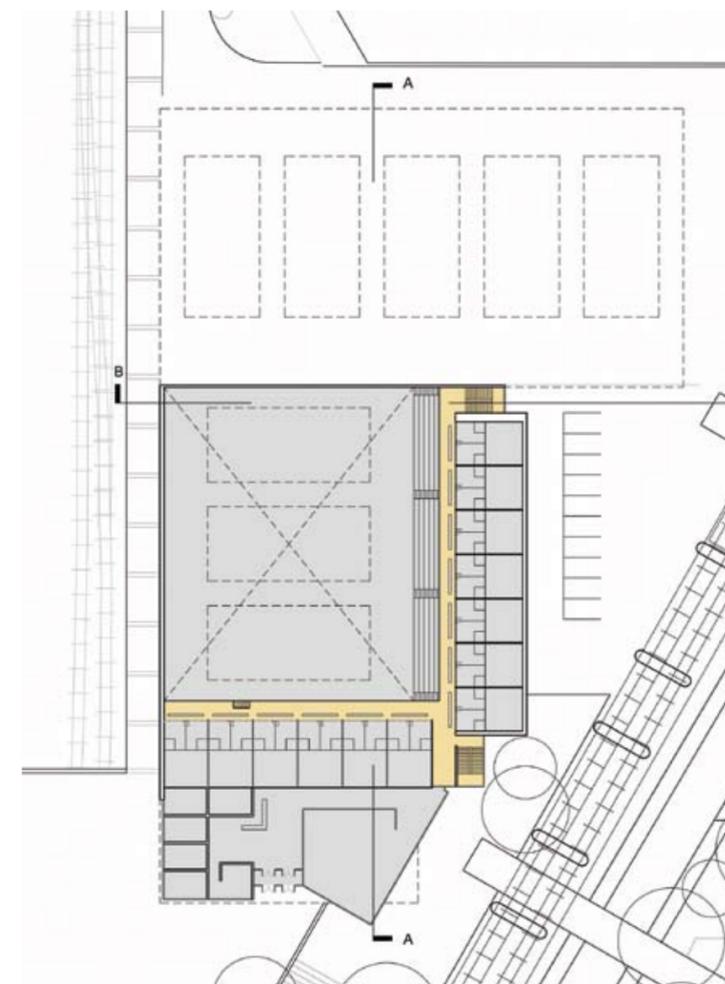
LEVEL 1

- 1 Tennis Courts
- 2 Outdoor Tennis Courts
- 3 General Lockers
- 4 Team Lockers
- 5 Executive Lockers
- 6 Executive Lounge
- 7 Competition Squash Courts
- 8 Tennis Entrance

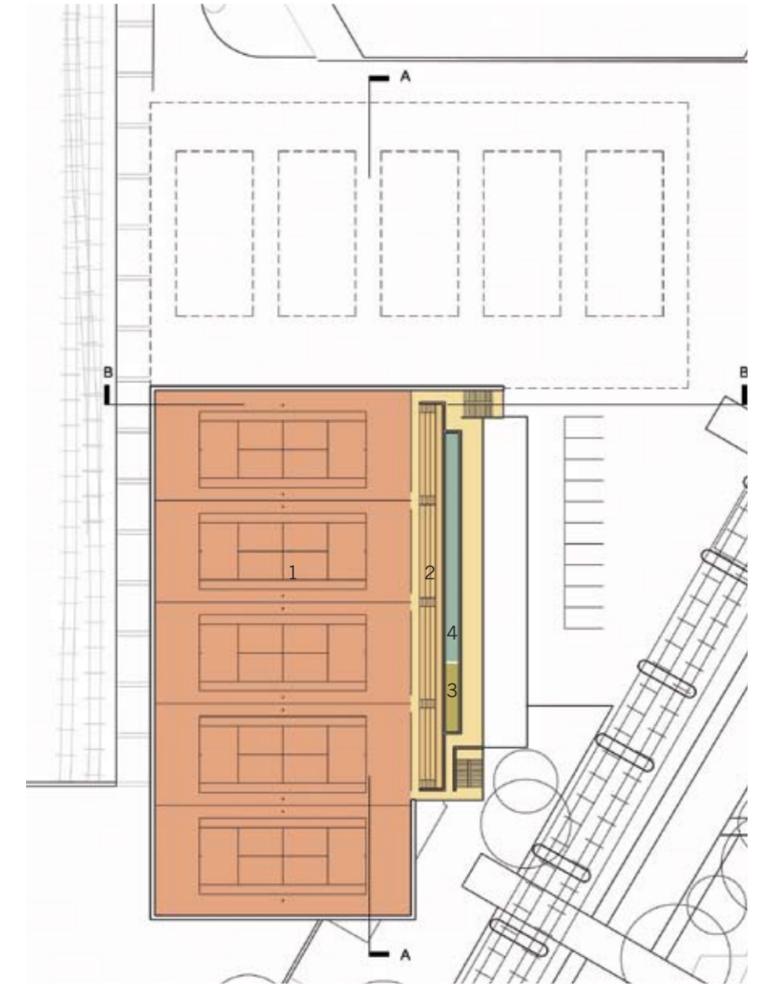


LEVEL 2

- 1 Squash Entrance
- 2 Squash Club
- 3 Offices
- 4 Squash Courts
- 5 Spectator Seating

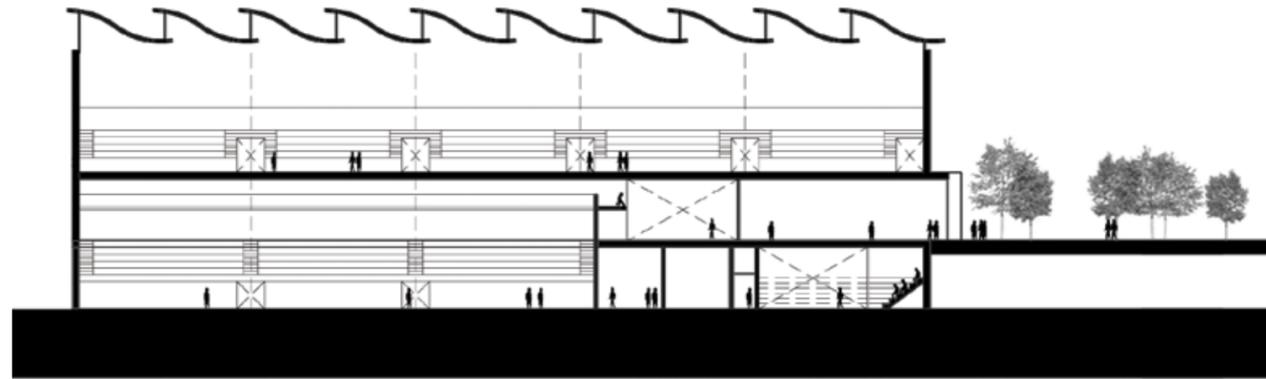


LEVEL 2 Mezzanine



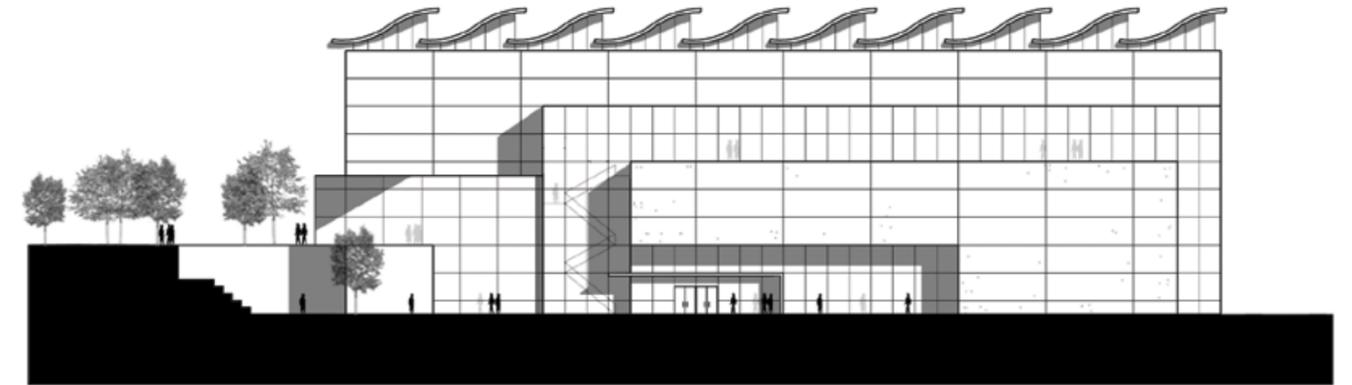
LEVEL 2

- 1 Tennis Courts
- 2 Spectator Seating
- 3 WC
- 4 Storage



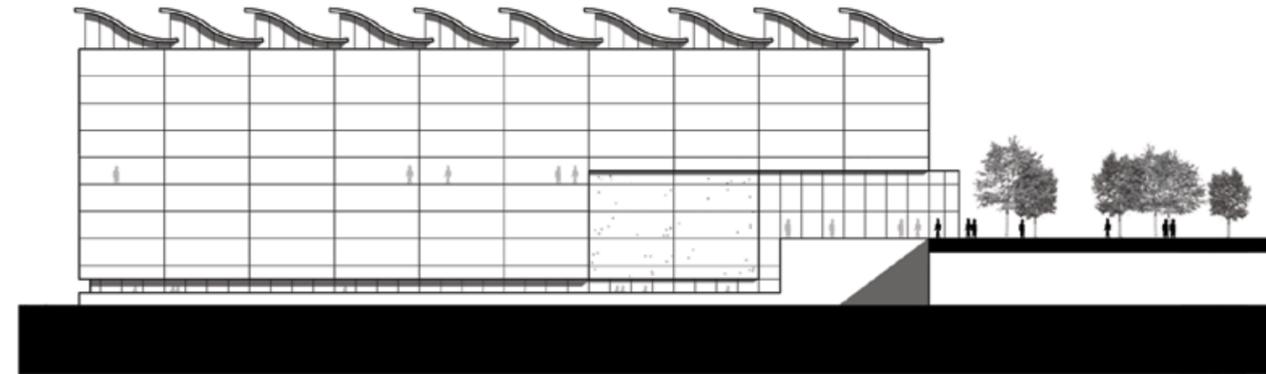
SECTION A

0 10 20 50ft



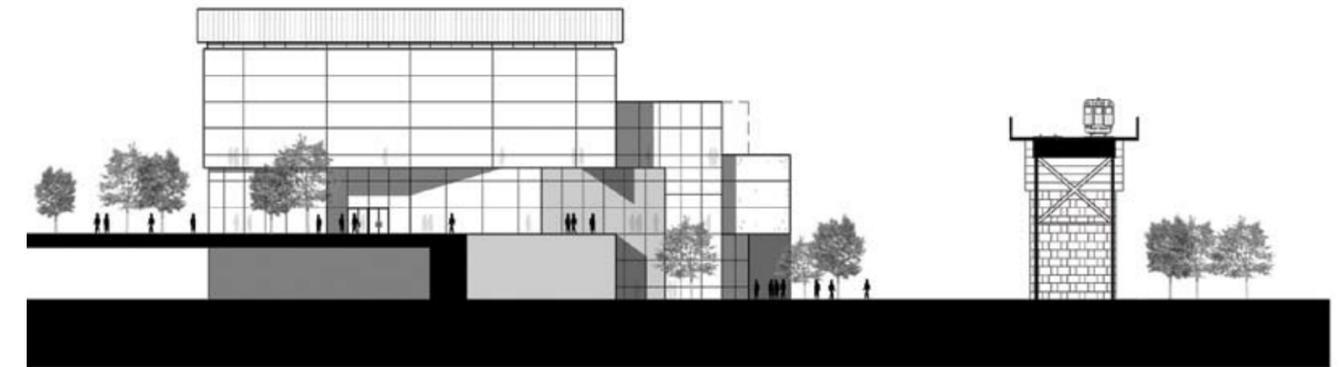
EAST ELEVATION

0 10 20 50ft



WEST ELEVATION

0 10 20 50ft



SOUTH ELEVATION

0 10 20 50ft

NATATORIUM

NATATORIUM - OPTION 1



Natatorium - Site Plan, Option 1



Natatorium - Site Plan, Option 2

TWO SITE AND BUILDING OPTIONS WERE DEVELOPED FOR THIS PROGRAM COMPONENT.

Option 1: North of Walnut Street at the existing Highline Park.

Option 2: Combining the Natatorium with the Racquet Center on the Levy Tennis Pavilion site.

OPTION 1

The site is bounded by Walnut Street, Chestnut Street, the Highline and the Left Bank Building, in the current Highline park.

Primary elements of the program are the 50m pool, separate diving well with 1m and 3m diving boards, 5m, 7.5m and 10m diving platforms, and spectator seating for 1,800 - 2,000.

The building is organized into three levels. The lower level at grade, provides accommodation for the pool deck, diving area, and team entrances as well as lockers and services. The intermediate level at Walnut Street provides main public access from the street, a reception and control space, offices and the spectator seating concourse. An upper mezzanine provides office and meeting spaces with views both to the street and the pool areas. The roof and mass of the building are articulated to reflect the change in levels as well as the asymmetric section of competition and spectator spaces, featuring a taller façade adjacent to the Highline and a lower one facing The Left Bank.

The roof configuration could feature large skylights or monitors providing natural lighting to the main pool hall.

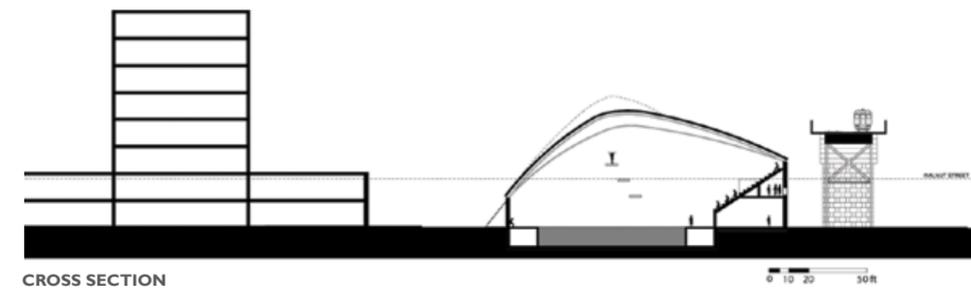
OPTION 2

The alternative option for the Natatorium is a site south of the Class of 1923 Ice Rink and north of the Racquet Center.

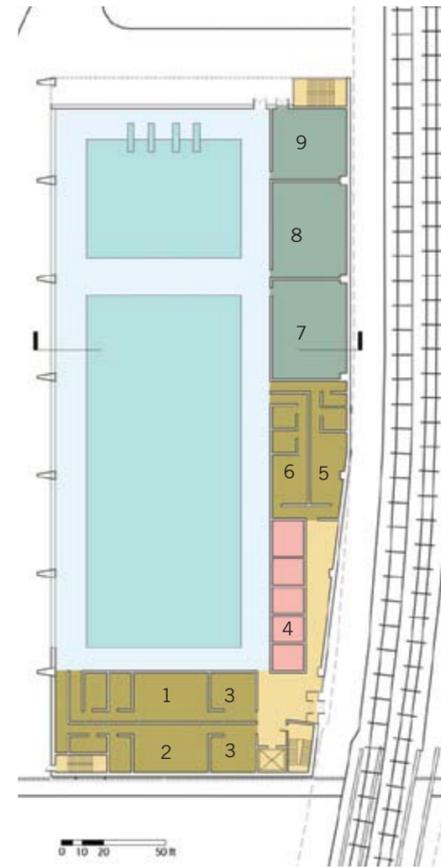
Option 2 would have the same amenities as those described in Option 1. It would also have its own dedicated entrance for users and spectators on the east side of the building oriented toward the new park and playing fields. Internally, the swimming facility would connect to the Racquet Center.



Natatorium - proposed interior view, Option 1

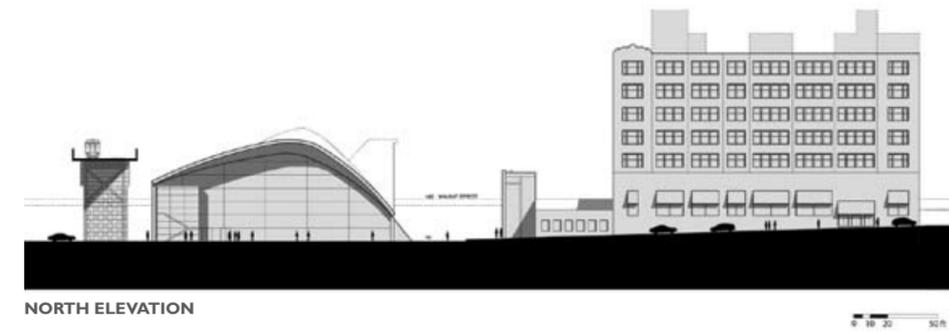


CROSS SECTION

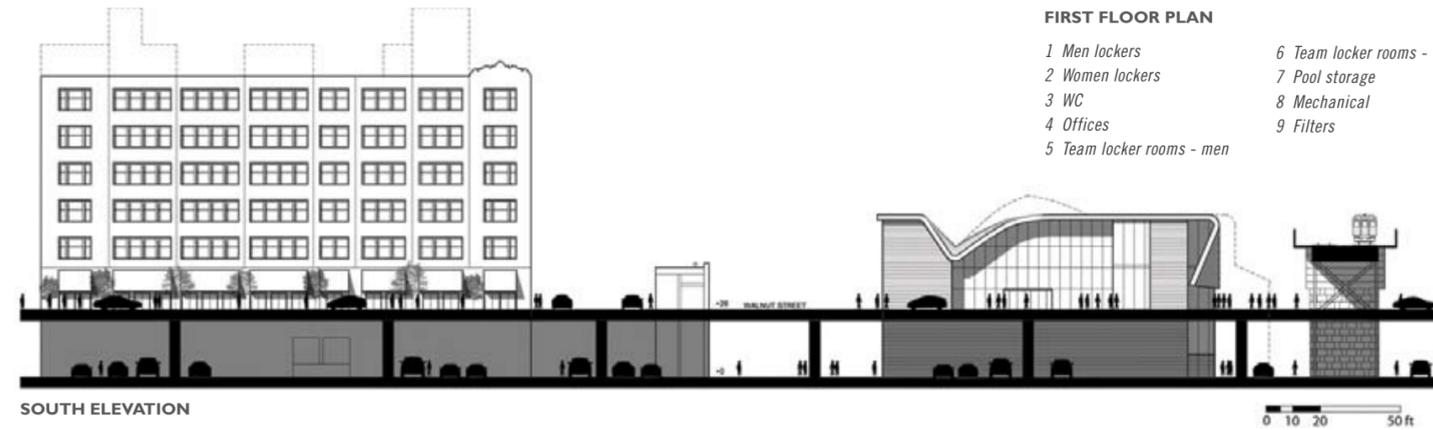


FIRST FLOOR PLAN

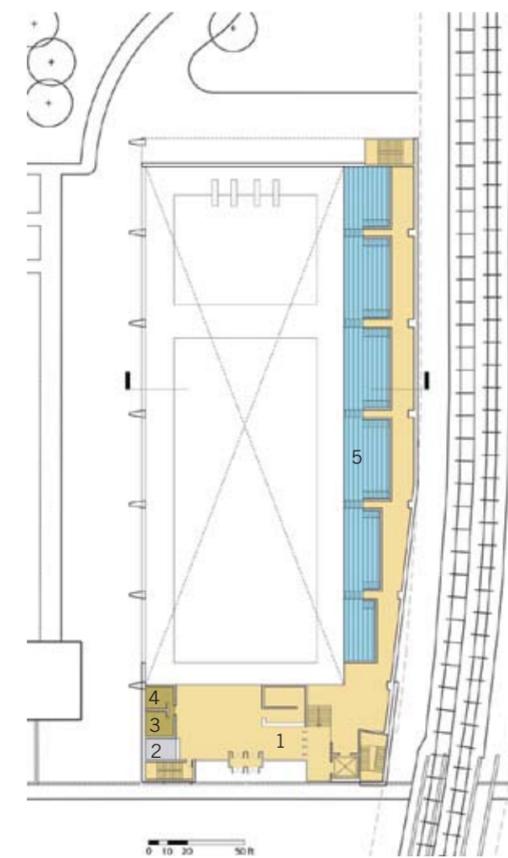
- 1 Men lockers
- 2 Women lockers
- 3 WC
- 4 Offices
- 5 Team locker rooms - men
- 6 Team locker rooms - women
- 7 Pool storage
- 8 Mechanical
- 9 Filters



NORTH ELEVATION

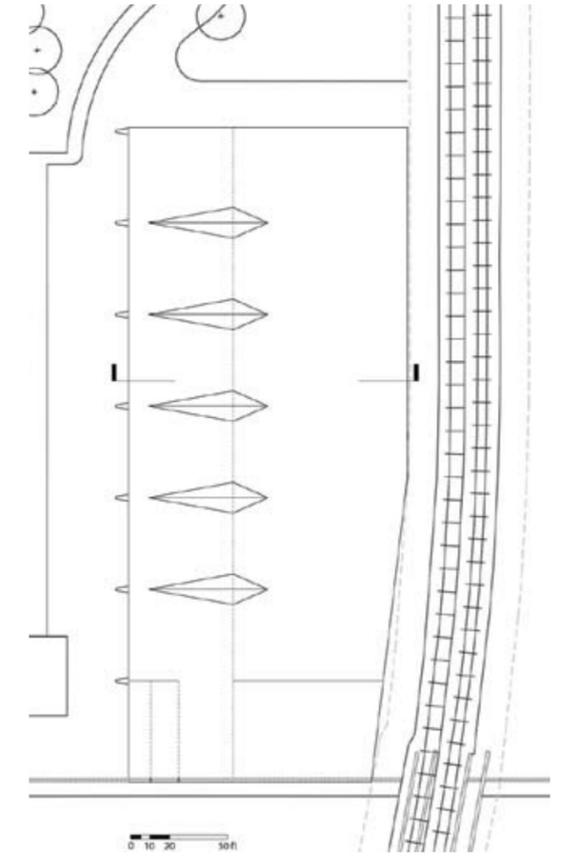


SOUTH ELEVATION

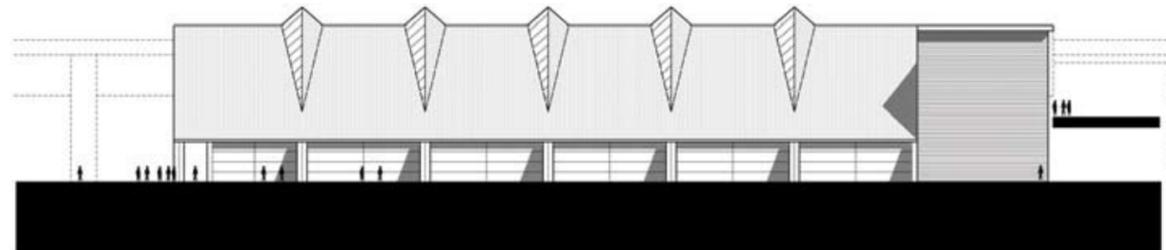


SECOND FLOOR PLAN

- 1 Reception
- 2 Juice Bar
- 3 WC Women
- 4 WC Men
- 5 Spectator Seating



ROOF PLAN

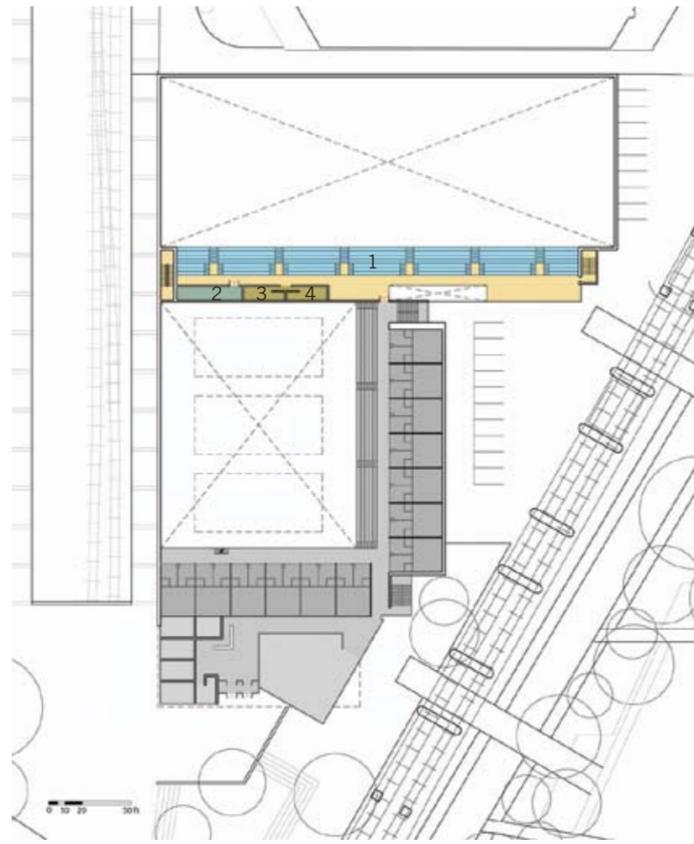


WEST ELEVATION



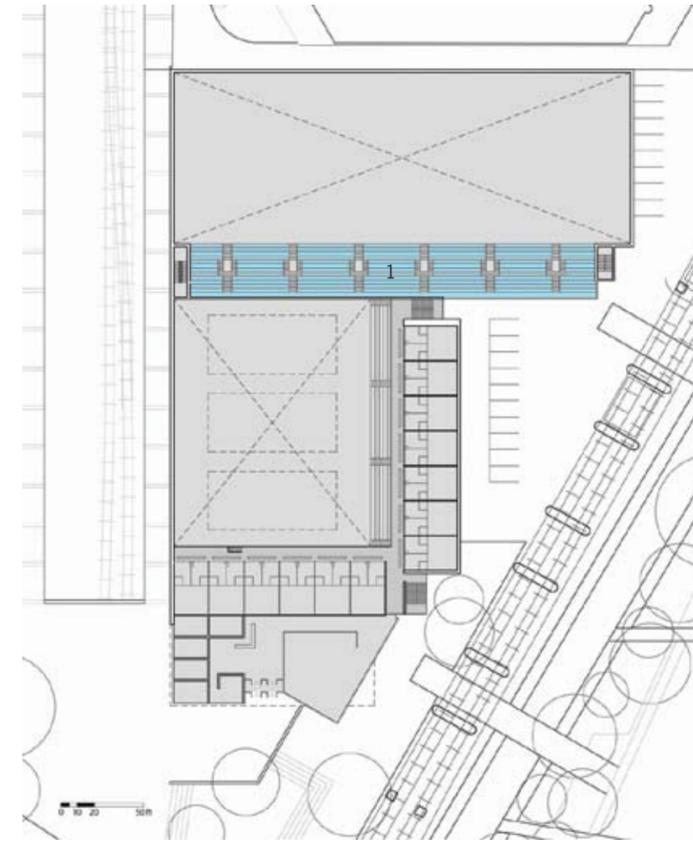
LEVEL 1

- 1 Reception
- 2 Men's Team Lockers
- 3 Women's Team Lockers
- 4 Men's General Lockers
- 5 Women's General Lockers
- 6 Coaches Offices
- 7 See Racquet Center Option 2 Plans



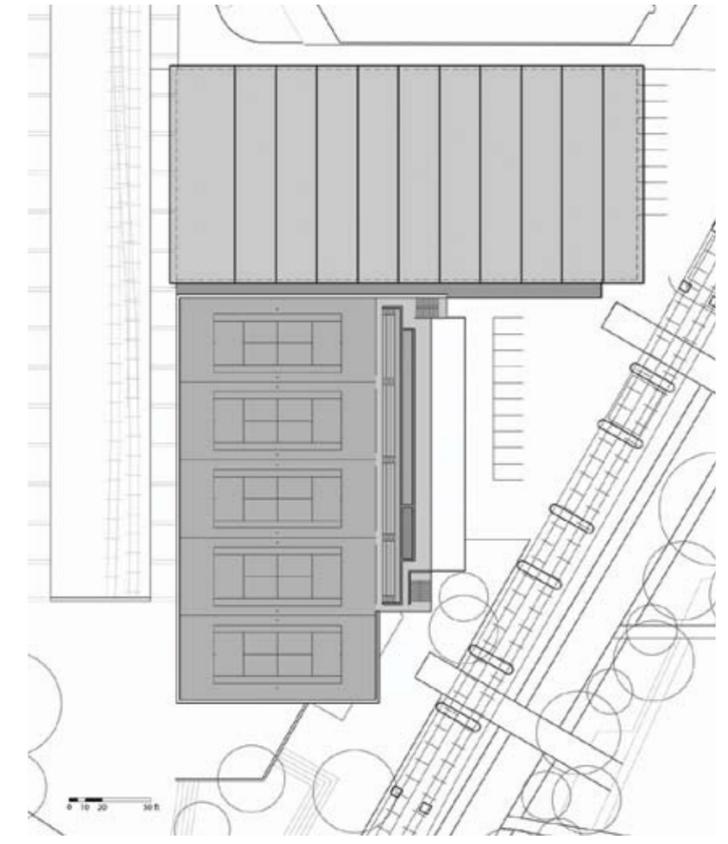
LEVEL 2

- 1 Spectator Seating
- 2 Storage
- 3 WC Men
- 4 WC Women

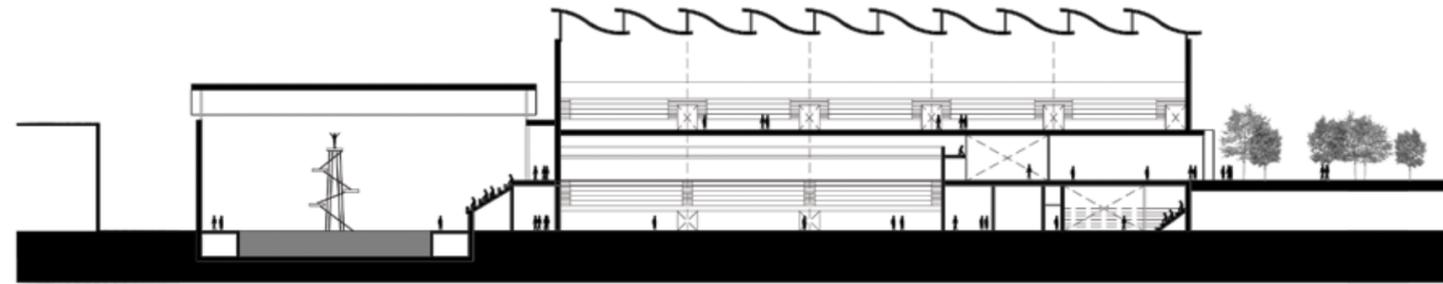


LEVEL 2 Mezzanine

- 1 Spectator Seating

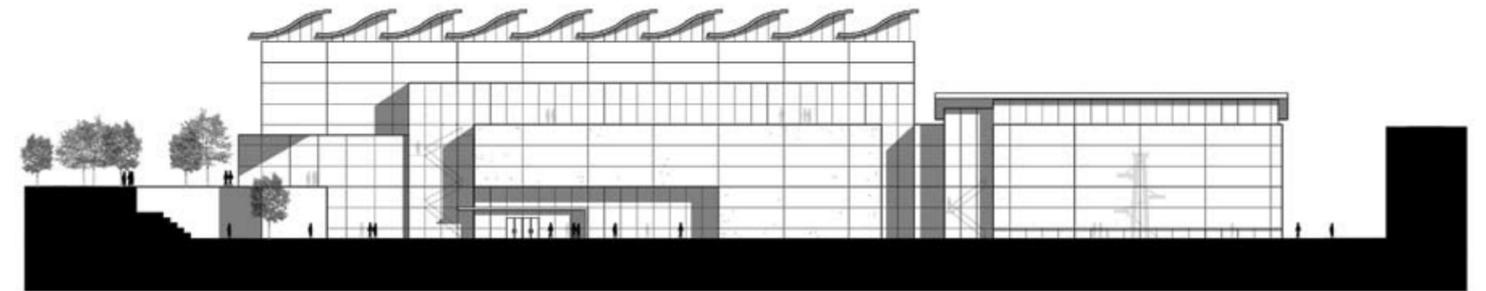


LEVEL 3



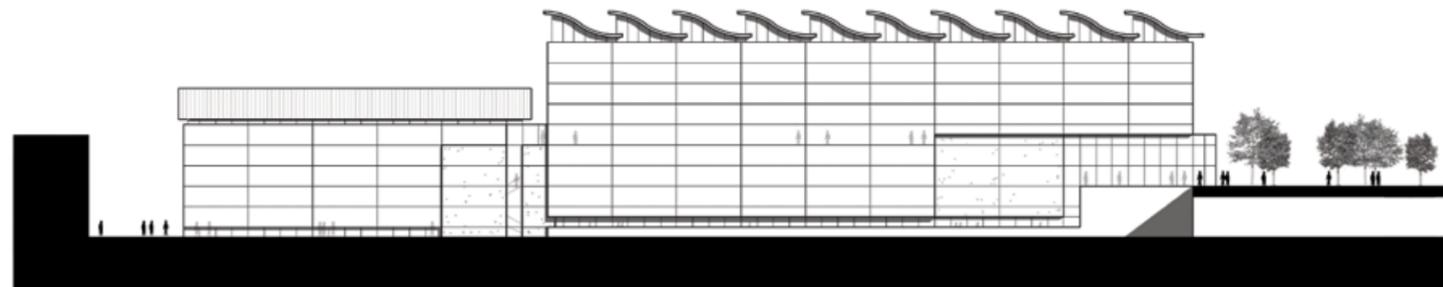
SECTION A

0 10 20 50 ft



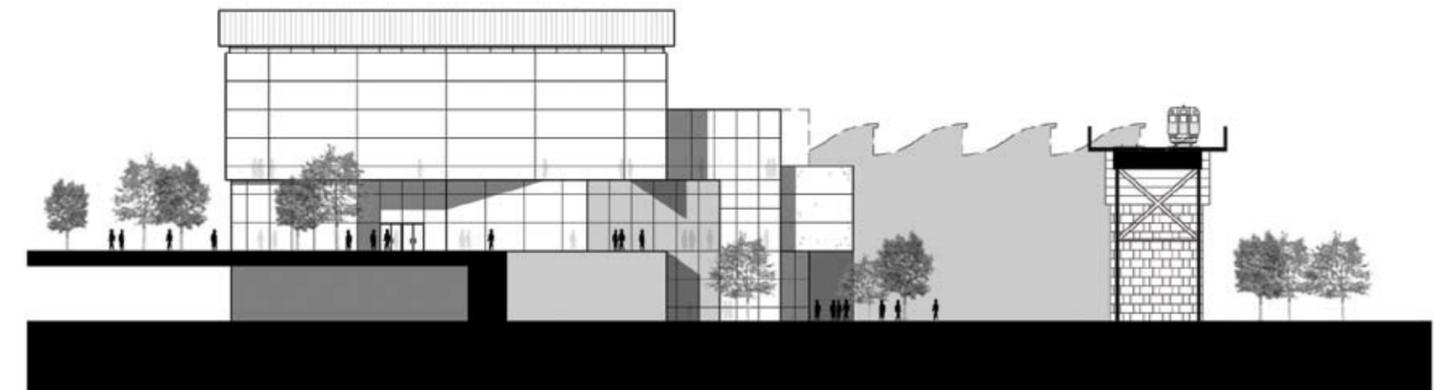
EAST ELEVATION

0 10 20 50 ft



WEST ELEVATION

0 10 20 50 ft



SOUTH ELEVATION

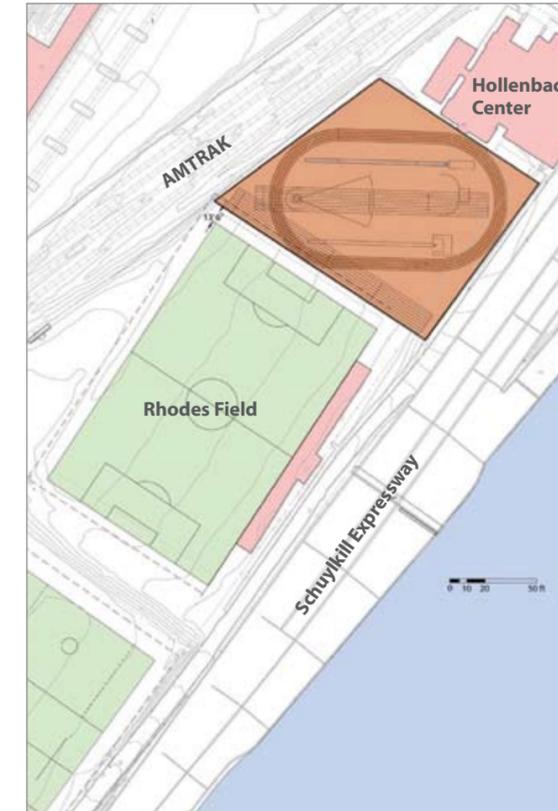
0 10 20 50 ft

INDOOR TRACK



Site Plan

INDOOR TRACK



Plan - Initial Phase

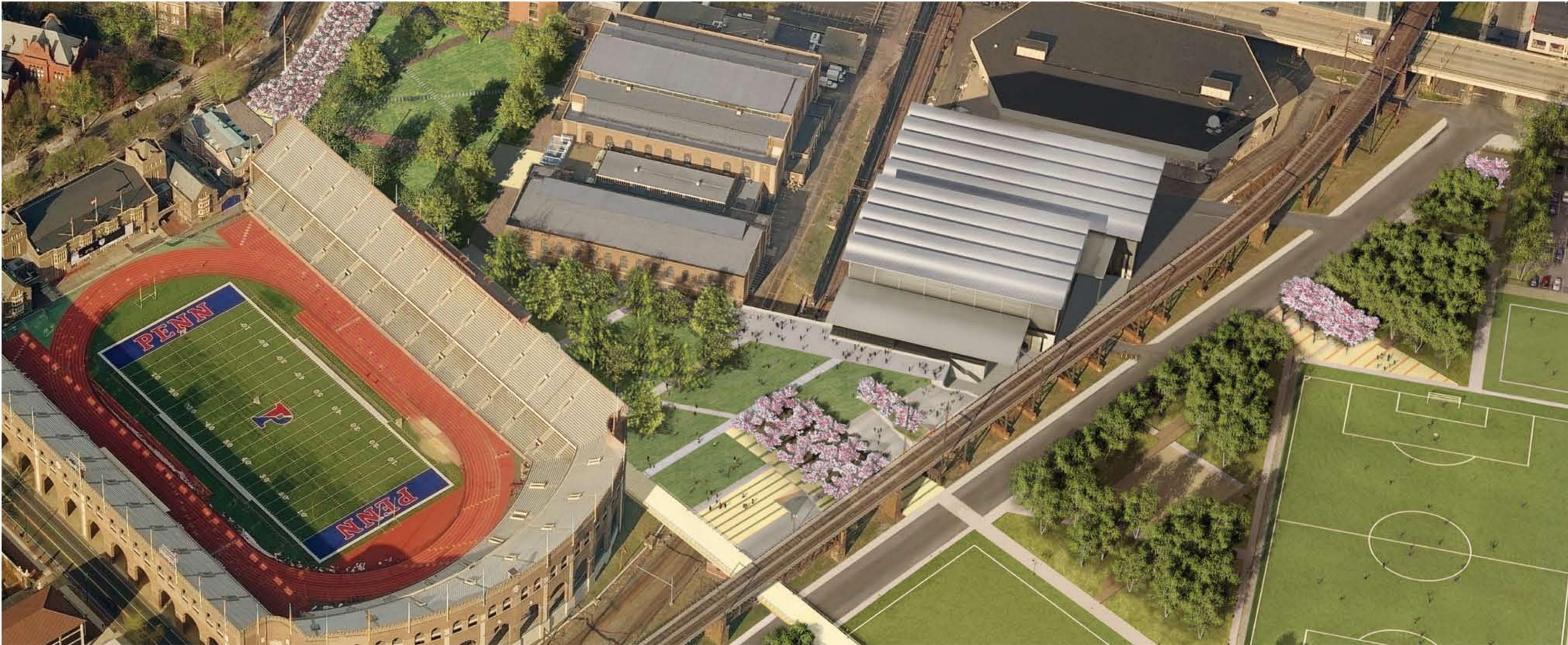
The program for the indoor track intends to accommodate a standard indoor oval track and related functions. These include a flat 200m track with up to 6 lanes, a straightaway for sprints and hurdles, and space for throwing and jumping events. Iterations of the program were developed as sites were tested for their suitability to accommodate the track.

The indoor track scheme presented here is largely shaped by the constraints of the designated site. Currently accommodating the Hollenback Annex, the site is bound on the north by Hollenback Center, on the south by the Rhodes Soccer Field, on the east by the service road, and on the west by Amtrak lines. The area and geometry of the site are less than ideal for a track of standard configuration.

Schemes were investigated that moved Rhodes Field slightly to the south to gain a better proportioned site. However this approach led to complications with the field's fixed elements like spectator seating and light poles and required additional earthwork to mediate the existing grading condition to the south of the field.

The proposed scheme fills the irregular-shaped site. The site will accommodate a 200M track with four lanes that is rotated diagonally in the space to achieve the maximum number of running lanes. The straightaway is accommodated along the longest side of the structure. The infield provides the area for throwing and jumping. The corners of the space outside the track could house practice throwing cages and nets, stretching mats, warm up machines as well as spectator seating. The gross area of the facility is approximately 59,000 GSF. Support facilities such as lockers, showers and toilets will be provided in the adjacent Hollenback Center.

The building is envisioned as a clear-span steel-framed structure of relatively simple massing and cladding. The roof configuration would feature large skylights or monitors providing natural lighting into the main interior space.



ACKNOWLEDGEMENTS

UNIVERSITY OF PENNSYLVANIA

Dr. Amy Gutman, President

Ron Daniels, Provost

Craig Carnaroli, Executive Vice President

Michael Harris, Associate Vice President

Mark Kocent, Principal Planner

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