



2010 RAGS VOLUNTEER PROJECT
ADAMS PARK:
 CONCEPTUAL SUSTAINABILITY STUDY

AIA Atlanta

ASHRAE Atlanta

U.S. GREEN BUILDING COUNCIL
 ATLANTA
GEORGIA
 BRANCH

ASLA | GA

YLa
 ATLANTA



GEORGIA SOLAR ENERGY ASSOCIATION
 GSEA

ASPE
 Atlanta Chapter

IIDA
 INTERNATIONAL
 INTERIOR DESIGN
 ASSOCIATION
 GEORGIA | CHAPTER

IN COLLABORATION WITH
 THE CITY OF ATLANTA

DEPARTMENT OF PARKS, RECREATION & CULTURAL AFFAIRS

MAYOR'S OFFICE - DIVISION OF SUSTAINABILITY

PREPARED FOR
 THE CITY OF ATLANTA

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Chapter 1: From Celebration to Service

In its second year as a collaborative effort, the Red and Green Scene (RAGS) Holiday Party 2010 was a wonderful success, with over 750 participants from eight organizations, including members of AIA Atlanta, ASHRAE, ASLA Georgia, ASPE, CSI, GSEA, IIDA Georgia, and USGBC Georgia. The evening celebrated the gathering of Atlanta's sustainable and design community and gathered funds for scholarships for emerging design professionals within each of the sponsoring organizations.

The celebration may be over, but the service has just begun. This year, a sub-committee of RAGS was created to bring the eight participating organizations together again, but this time to give back to the community in a collaborative manner. The Committee elected to work on a project for the good of the citizens of Atlanta. The City of Atlanta responded positively and thus the first RAGS Charette was conceived.

Held on Saturday, January 29, 2011, the RAGS Charette brought together over 25 professionals and students who collaborated for 8 hours on a design effort for the good of the community of Adams Park in Southwest Atlanta. City Officials were also in attendance and were excited to watch the teams work independently, and as a group, in an effort to assist the city in generating a solution for Adams Park, while providing sustainable ideas that can be used for all the parks of the City of Atlanta.



Volunteers check-in guests as they arrive at the party.



Four of the 750 participants from Atlanta's design professions.



Red & Green Scene 2010.

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Chapter 2: The Process

City Officials presented the project for RAGS Committee consideration in September of 2010, and on Monday, Oct. 18, 2010, a site visit to Adams Park was conducted by the Committee members and volunteers. All of the organizations were represented at the site visit and a final decision for the scope of the project was made.

Project Teams

The project teams consisted of professionals from the following organizations:

- American Institute of Architects, Atlanta Chapter
- American Society of Heating, Refrigerating and Air-Conditioning Engineers, Atlanta Chapter
- American Society of Landscape Architects | Georgia Chapter, Atlanta Section with Young Landscape Architects | Atlanta
- American Society of Plumbing Engineers, Georgia Chapter
- Construction Specifications Institute, Atlanta Chapter
- International Interior Design Association, Georgia Chapter
- US Green Building Council, Georgia Branch
- City of Atlanta, Department of Parks, Recreation and Cultural Affairs
- City of Atlanta, Mayor's Office - Division of Sustainability

Proposed Project

The following outline of needs and wants was provided by officials with the City of Atlanta: Department of Parks, Recreation, and Cultural Affairs for consideration in the Adam's Park Community Service Project.

Needs:

- Design assistance for pending renovation of recreation center, based on renovation budget of \$900,000
- Recommendations for accessibility improvements (buildings & site), landscaping, & parking, including historic preservation
- Energy & water sustainability recommendations
- Recommendations for security improvements
- Recommendations for landscaping and parking
- Recommendations for increased recycling

Wants:

- Historic restoration plan for Old Cascade Community Clubhouse
- LEED EB: O&M certification for recreation center
- ASHRAE Building Energy Quotient Labeling pilot for recreation center
- Comprehensive long-term plan for entire park
- Renewable Energy pilot

Immediate areas of Focus:

- Recreation Center, Pond Edge, Picnic Area, Renewable/Sustainable template for implementation

Participating Professional Organizations:

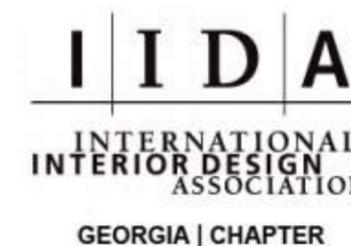
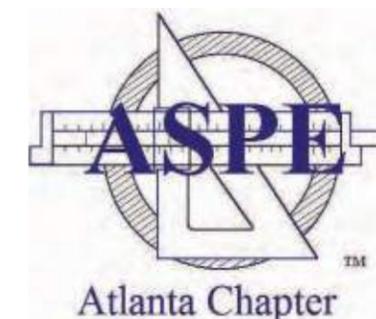




Figure 2-1: Existing entry sequence to Recreation Center



Figure 2-2: Existing conditions at Recreation Center west entrance



Figure 2-3: Existing conditions at Recreation Center east entrance

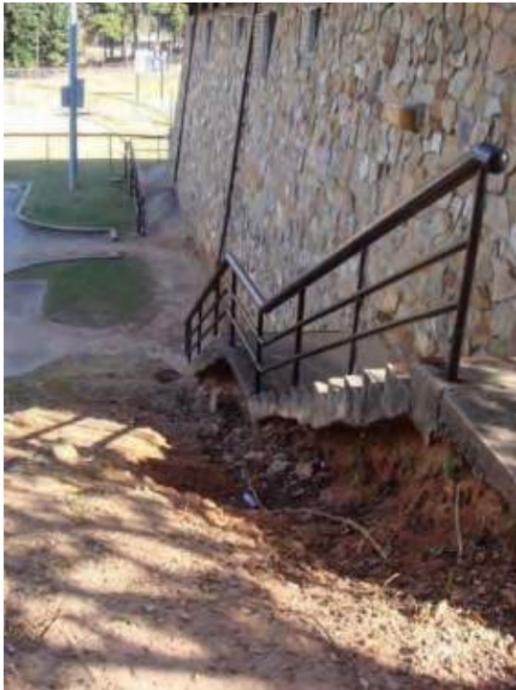


Figure 2-4: Existing erosion at west entrance



Figure 2-5: Existing erosion undermining stairs at west entrance to Recreation Center

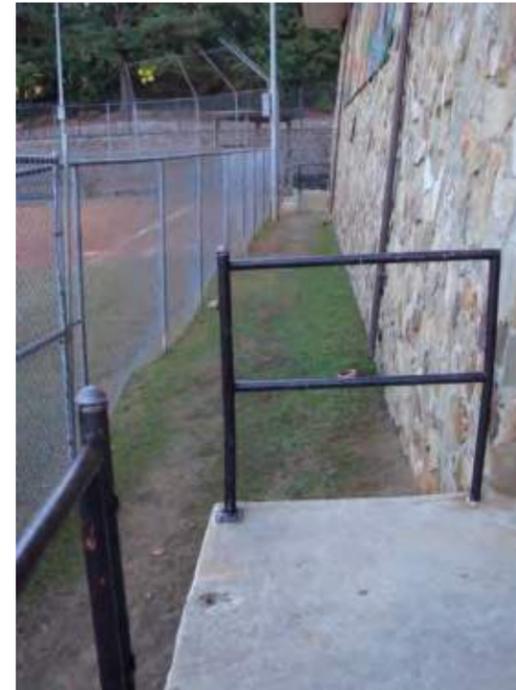


Figure 2-6: Existing northwest emergency exit

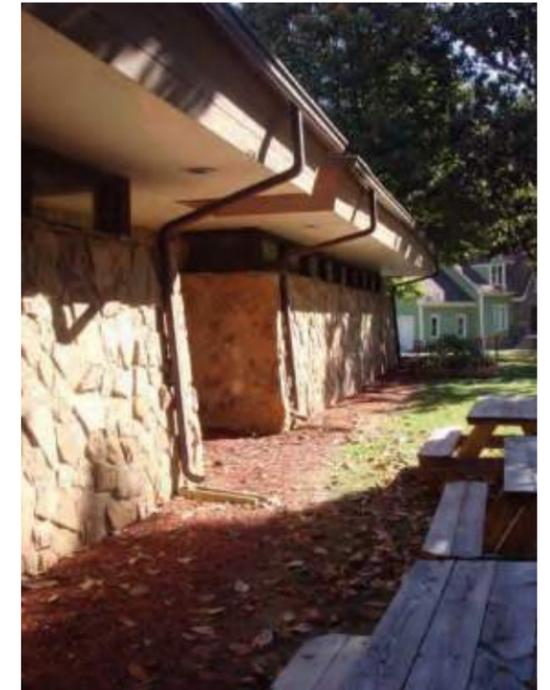


Figure 2-7: Existing Rec Center, south side



Figure 2-8: Existing Pond, view looking north



Figure 2-9: Historic granite arched bridge circa 1930s

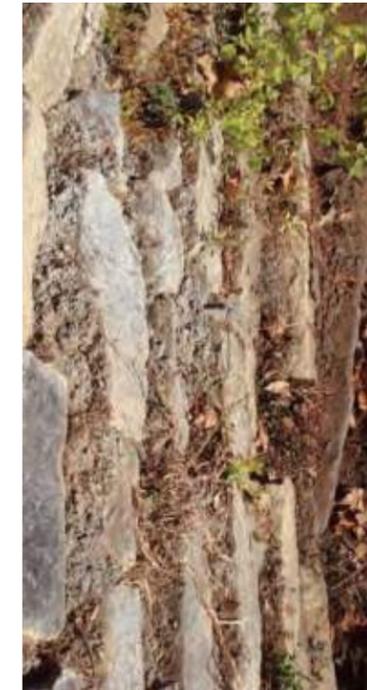


Figure 2-10: Granite Pond Wall

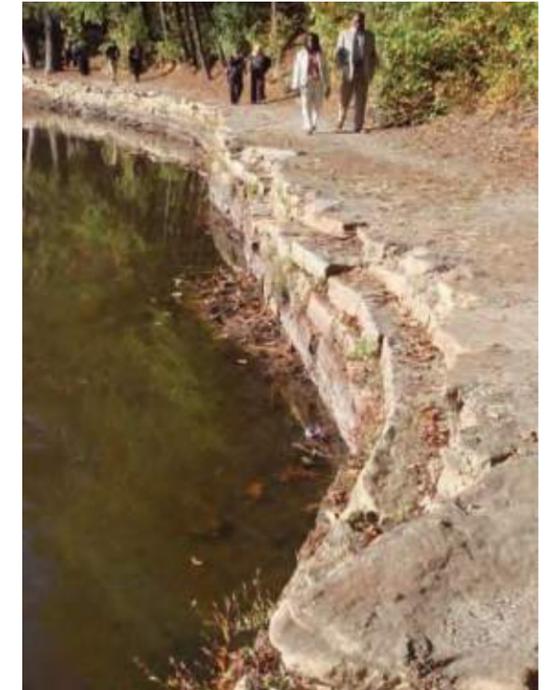


Figure 2-11: Granite Pond Wall



Figure 2-12: Existing Pond headwater structure



Figure 2-12: Existing Pond, view looking south



Figure 2-13: Golf Course irrigation pump house



Figure 2-14: Existing signage leading to picnic area



Figure 2-15: Bridge crossing intermittent stream at picnic area

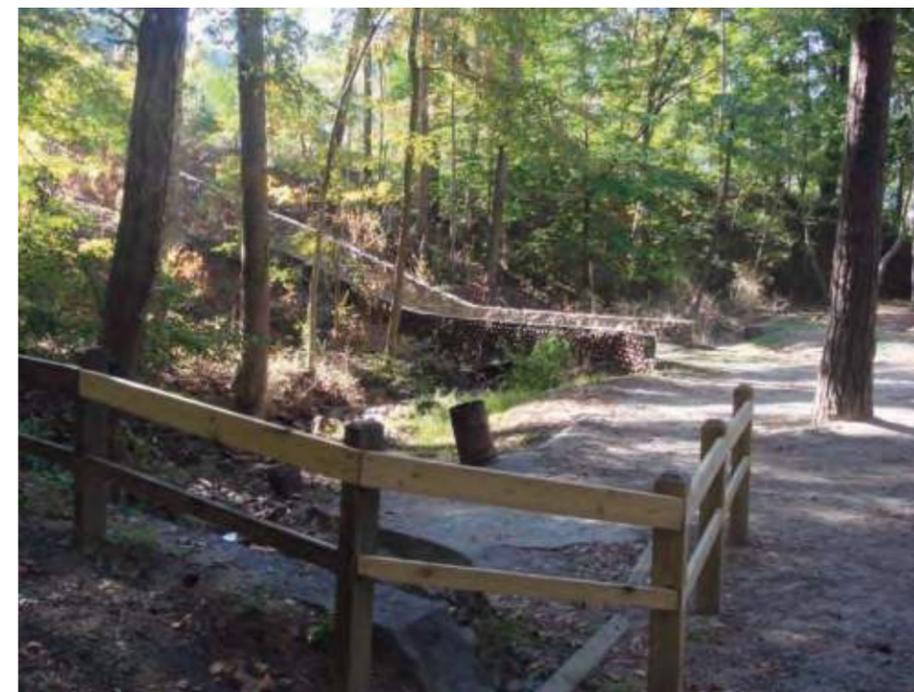


Figure 2-16: Historic arched bridge structure leading to pool house



Figure 2-17: Typical granite site stairs



Figure 2-18: RAGS Volunteers during our October Site Visit



Figure 2-19: Recently renovated Picnic Shelter



Figure 2-20: Rock outcropping near Picnic Area

Chapter 3: Charrette

Pre-Charrette Meeting - January 15, 2011

In order to prepare for the Charrette, it was determined that a gathering of volunteers prior to the Charrette would be fruitful. On Saturday, January 15, 2011, representatives from each team gathered at Adams Park Recreation Center. For several, this was their first site visit. The group discussed the project, informally interviewed staff, walked the site and building for inspiration, and determined that the mission of the project is to provide "Healthy Living" for all who visit Adams Park, especially the community in and around the park.

The focus of the recommendations will be on the main level of the center. A large multi-purpose space was needed for community purposes, and a strong connection between the park and the recreation center was desired by all. It was determined that both exits should serve as "front doors", as the community used one, and the sports games participants used the other. The creation of an axis between the two entries would be advantageous. Moreover, accessibility was addressed as well as circulation from the gymnasium to the bathrooms/concession area. The quality of life would be addressed by designing informative spaces that will respect the needs of the community, the environment, and all of its users to thus achieve a win-win solution.



Volunteers inspect the site during the Pre-Charrette Meeting



Volunteers coordinate during Pre-Charrette Meeting on January 15, 2011



Volunteers inspect the site during the Pre-Charrette Meeting

Charrette - January 29, 2011

The Charrette focused on generating a sustainable plan for the Recreation Center, picnic area, and pond area of Adams Park, located in Southwest Atlanta. The layout of the Charrette space provided a U shaped configuration of tables, with breakout session tables along the perimeter, and worked beautifully to allow group discussions as well as individual team work.

First, a tour of the building and grounds refreshed the memories of some committee members and introduced new volunteers to the scope of the work. After an introduction to the project by City Officials and an overview of the history of the site by UGA BLA Students, breakout sessions allowed groups to conduct focused work.

The Sustainable Design Team was led by Reed Thomas representing USGBC-GA, and was based on the LEED for New Construction/Major Renovations certification; the Systems group by Michael Dudley of ASHRAE; Interiors/Architecture was co-led by Liset Robinson representing IIDA and Richard Nelson of AIA; and Site Design was led by Charles Sears and Joni Payne Young of ASLA.

Each team set their own objectives for the day, and deliverables for the booklet. Many of the members of the teams took work home to finish up during the following week.

The Graphic booklet was then compiled by the Graphics team led by Charles Sears, with editing provided by Co-Chair Liset Robinson. The booklet was presented to City Officials a few weeks later.



Saturday morning, January 29, 2011 at the Adams Park Recreation Center.

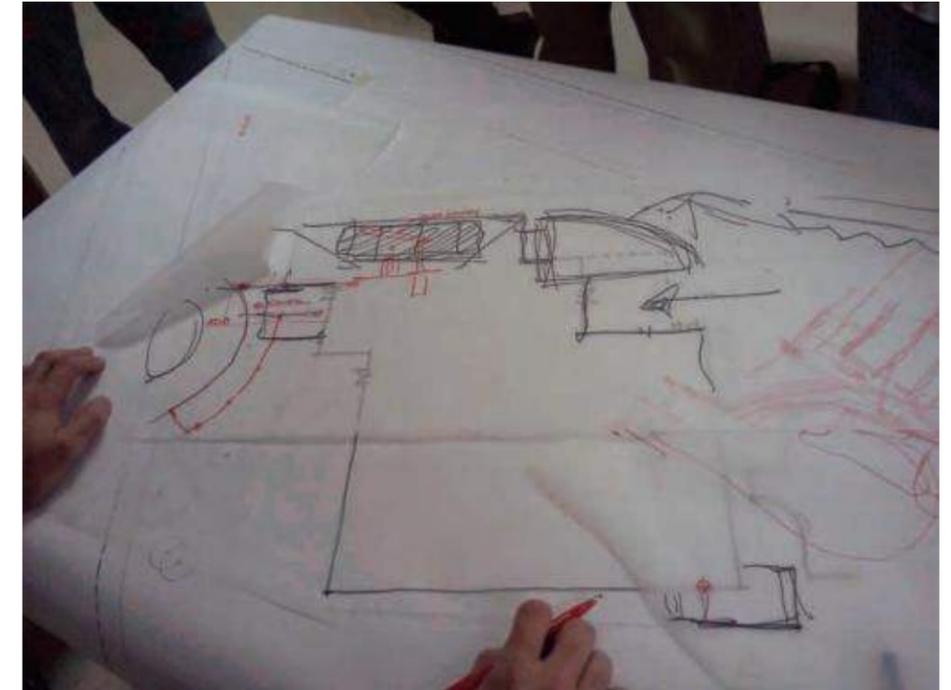


Charrette participants arrive and set up to begin at 9am.

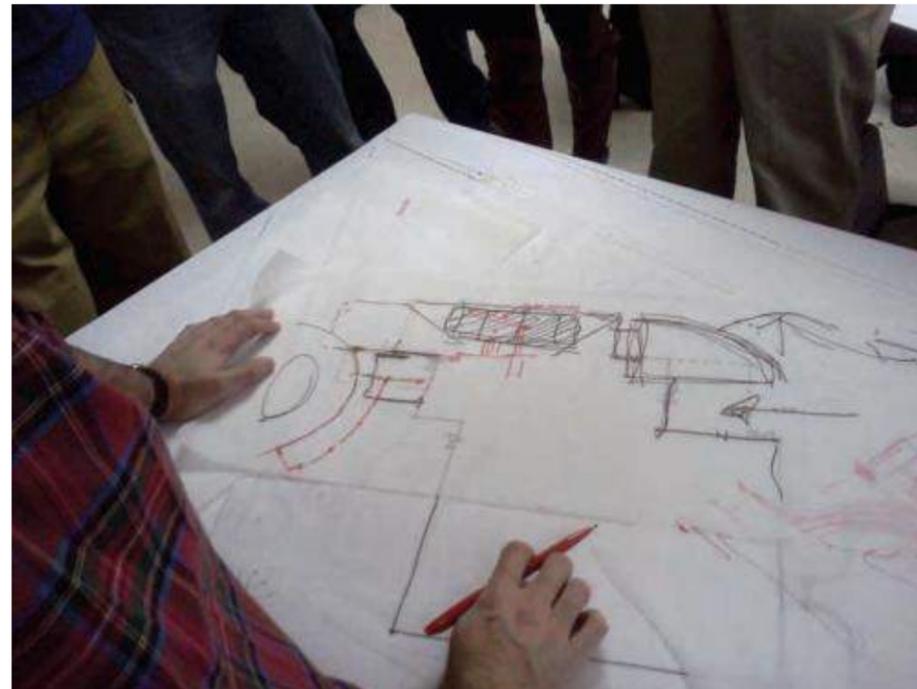




UGA BLA Student, Jared Dobbs, presents background information on Adams Park.



The Charrette begins with analysis of current circulation patterns at the Rec Center.





Charrette participants visit specific areas of the site to discuss possible solutions.



USGBC members discuss sustainability recommendations.

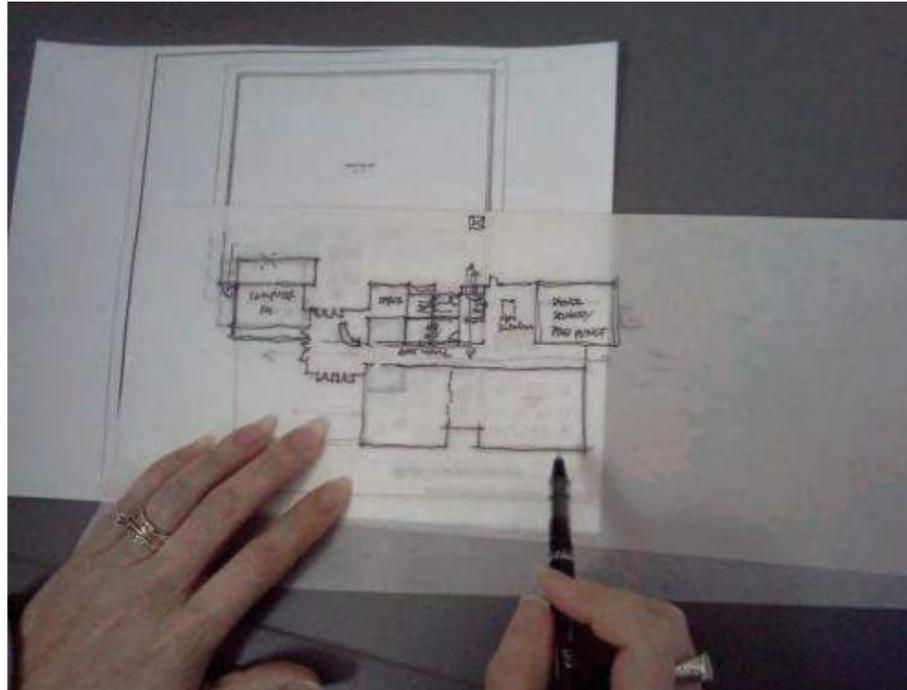


ASLA and YLa members draft site design concepts.

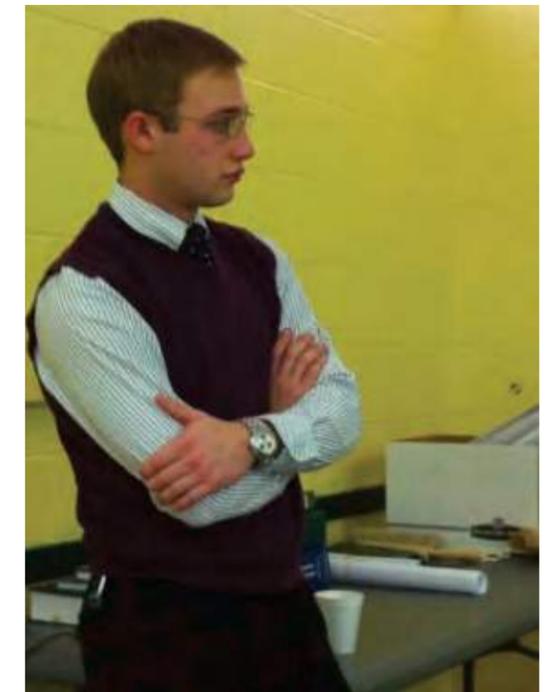
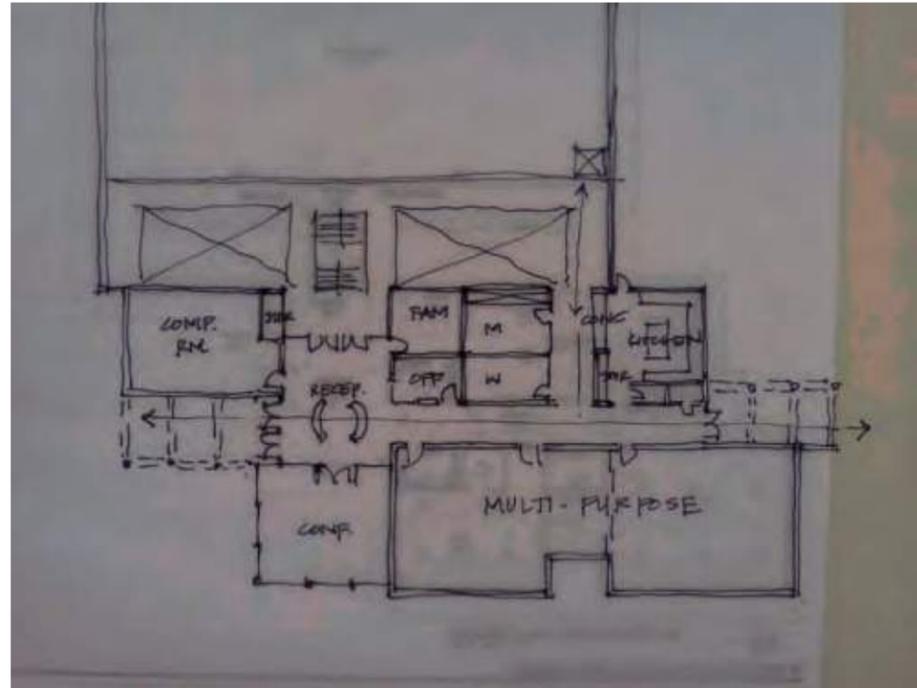
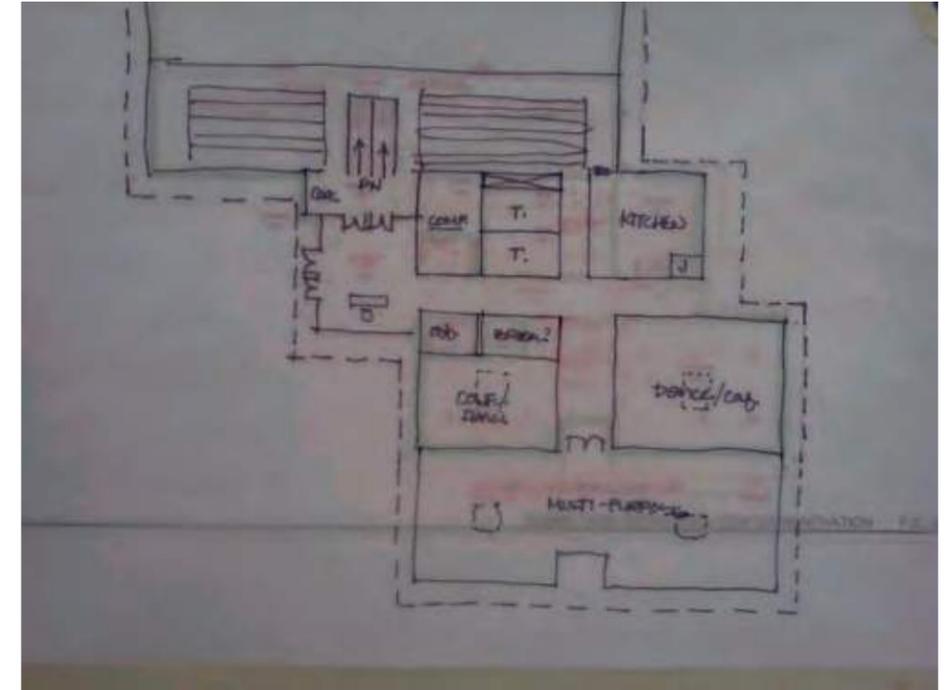


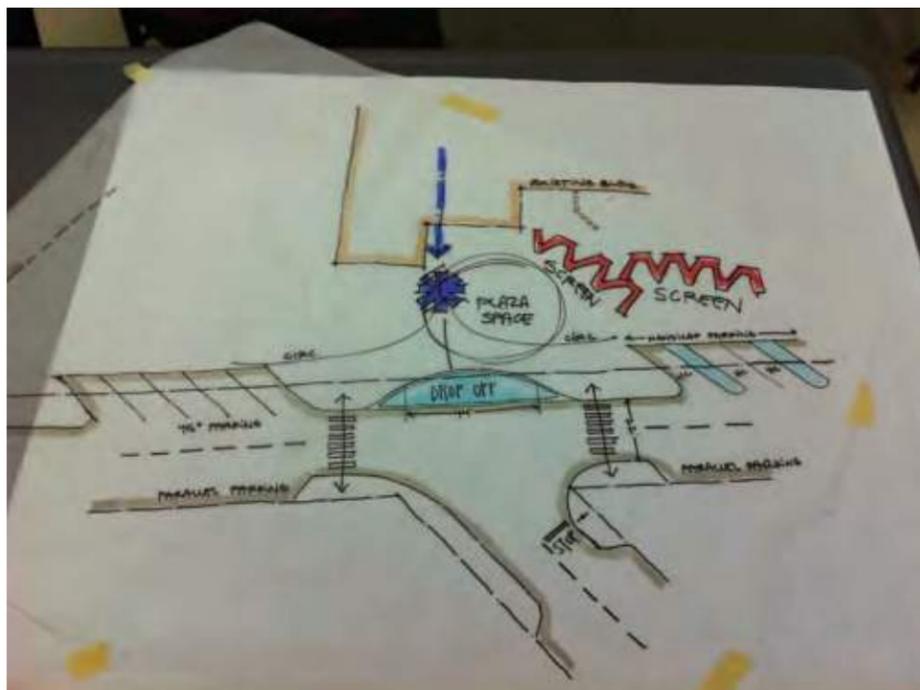


AIA and IIDA members discuss their ideas.



Concept development.





Recreation Center East Entrance concept.



AIA and IIDA present their initial concept and approach during the lunch break.



ASLA and YLa present their initial concept and approach during the lunch break.



Recreation Center West Entrance Concept.



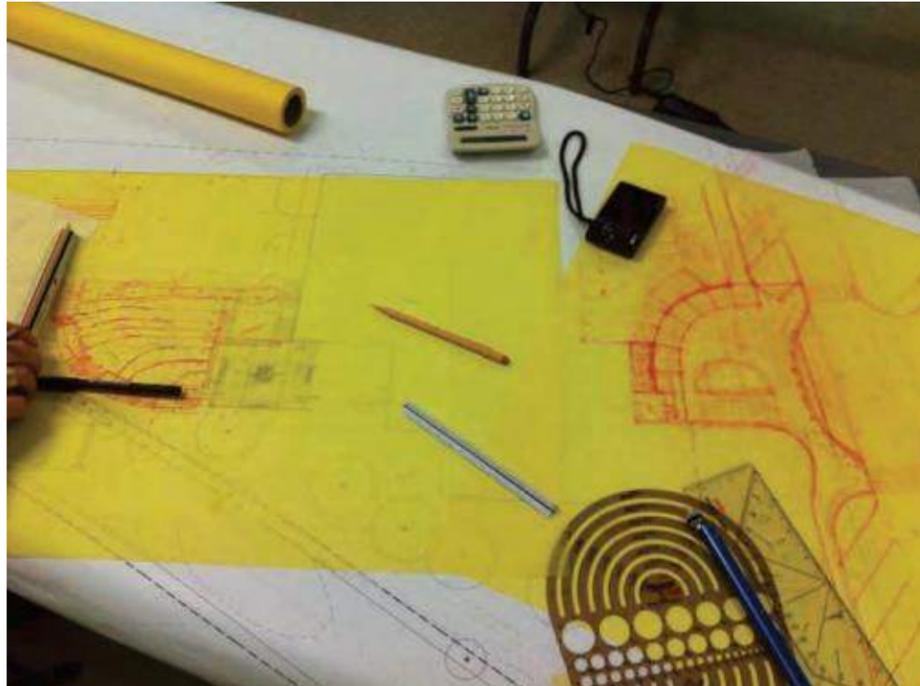
IIDA presents their initial concept and approach during the lunch break.



ASLA and YLa explain concept.



USGBC presents their approach to sustainability.



After lunch, concept refinement begins.



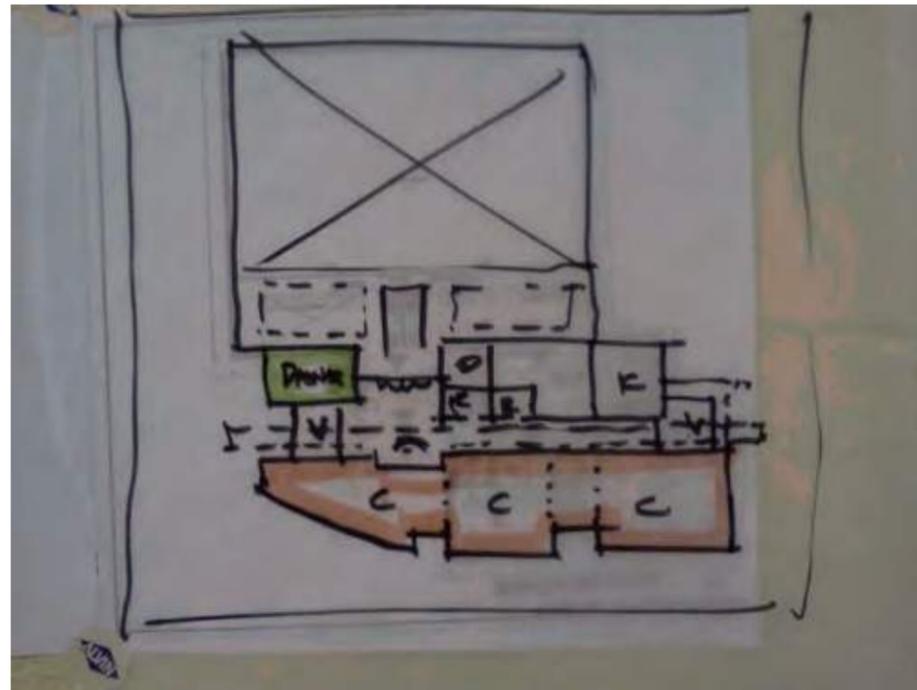
AIA and ASLA collaborate on a unified approach to the Recreation Center Site.



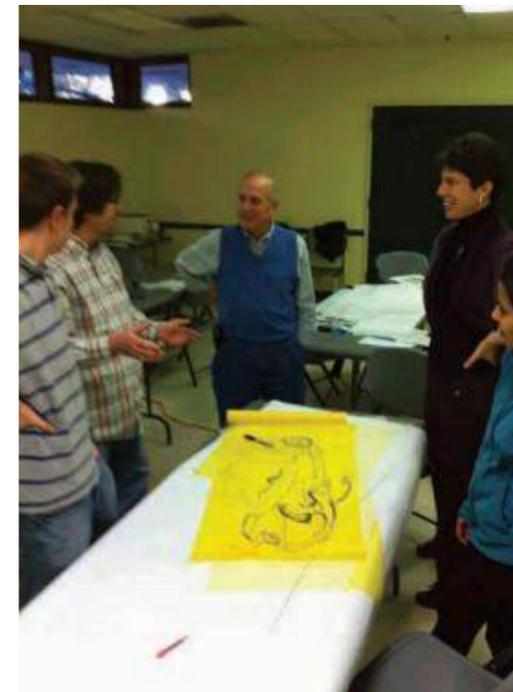
ASLA and YLa drafting their final concepts.



End of day critique.



Recreation Center architectural approach.



Everyone wraps up the day with homework.

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Chapter 4: Site Recommendations

Coordinated Approach

Site recommendations begin at the Recreation Center and carry through the pond area and picnic areas. The Landscape Architecture team worked closely with the Architecture/Interiors Team in order to provide an integrated approach to the design. The reinforcement of an axis that runs through the main corridor of the recreation center and continues through the park, and the organization of existing paths to reinforce this link, provided a starting point for the design.

Focus Areas

The Site solutions were focused on three areas: the Recreation Center entries (East Community entry and West Sports entrance), the Pond area, and the Picnic area (see Figure 4-1: Overall Site Recommendations Plan).

Each Focus Area had its own unique set of design problems and program requirements. The Landscape Architecture Team divided into two groups at the Charrette in order to tackle the large amount of acreage to be planned in the short 8 hour time-span. Group One, led by Charles Sears, concentrated on the Recreation Center in close detail at 10 scale. Group Two, led by both Charles Sears & Joni P. Young, tackled two areas, focusing on the Pond and Picnic areas at a larger more conceptual scale.



Figure 4-1: Overall Site Recommendations Plan

Recreation Center Focus Area

The design approach to the Recreation Center focused on improving accessibility to the building. Currently, the building's main entrance is situated to the West, facing the large, dead end parking bay adjacent to the gymnasium. The problem with this location is the 22' difference in elevation between the existing parking lot and the finished floor elevation (FFE) of the main entrance.

The existing ramp structure is excessively steep with slopes measuring upwards of 13%. For reference, a normal ramp in a parking deck slopes at 10%. The maximum slope for an accessible route according to the ADA requirements is 1:12, or 8.33%. A quick study at the beginning of the Charrette revealed that over 300 linear feet of ramp would be necessary to allow an accessible route to reach the west entrance from this parking lot.

This quickly eliminated the idea of improving the existing western ramp, and shifted the team's focus on the East entrance where the existing street grade is nearly level with the Recreation Center's FFE. The team decided to eliminate the existing few parking spaces located at the East entrance, and transform this space into the main entrance into the facility. The large width of the existing Logan Lane provided an untapped opportunity for on-street parking. The space between the East entrance and Logan Lane was redesigned into a large plaza space to serve as a formal entrance sequence. An oversized drop-off will allow for easy access to the front door of the recreation center. Removable bollards separate the drop-off from the plaza, restricting vehicular access to authorized service and deliveries as deemed necessary by the Recreation Center Staff. A covered walkway connects the proposed handicap on-street parking spaces to the East entrance. This walkway canopy presents an opportunity for either a green roof structure or solar panels. The majority of the East Entry Plaza has been designed as a crushed aggregate which creates a pervious hardscape surface, reducing storm water runoff and overall impervious surface. A long bay of bicycle racks strategically located by the front door aim to encourage alternative transportation by providing priority access to the building.

A crushed aggregate Fitness Trail begins at the East entrance. This path loops around the south side of the Recreation Center and connects to the West entrance plaza. Moving the accessible route to the east created an opportunity to completely redesign the western approach. In order to address the steep grades, a single staircase has been created connecting the lower parking lot to the West Entrance Plaza. The existing slope can now be re-graded to allow for a small, vegetated bioswale to be located at the foot of the slope. This bioswale should have an overflow pipe that is connected directly into the existing catch basin set in the parking lot. In addition, the slope shall be re-vegetated with plant species having fibrous root systems such as native grasses to help stabilize the soil on the slope.

The West Entrance Plaza was designed in harmony with the Architecture / Interiors group, as their new addition frames the southern edge of the plaza. The existing east-west corridor that runs through the building spills out into this intimate plaza space. Exterior paving and interior flooring materials should compliment each other to the degree that users will feel that the exterior is merely an extension of the interior. The repetition of the curves in the East and West Entrance Plaza help to tie the plazas to the new building addition.

An elevated deck space shall replace the existing exterior steps that have become undermined by runoff. A new retaining wall will create a leveled space underneath the deck where rain-harvesting cisterns could be located to collect roof runoff for landscape irrigation. The deck itself will serve as an outdoor room, helping to increase the usable space created by the addition to the Recreation Center. From this vantage point, 22' above the existing parking lot, users shall be able to take in the entire Adams Park site seeing all the way to the north end of the Pond in winter.

Rain Harvesting Cistern Concept

- A. Rain falls on existing roof
- B. Gutter downspouts are redirected into Cisterns located underneath deck
- C. Cisterns collect (harvest) rainfall to be utilized for landscape irrigation

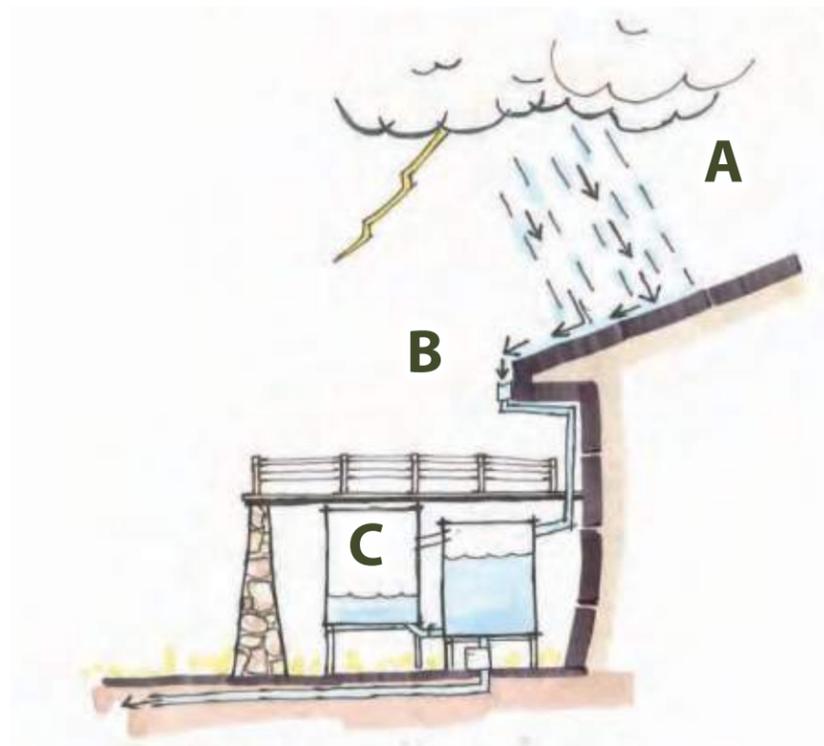


Figure 4-2: Rain Harvesting Cistern Concept

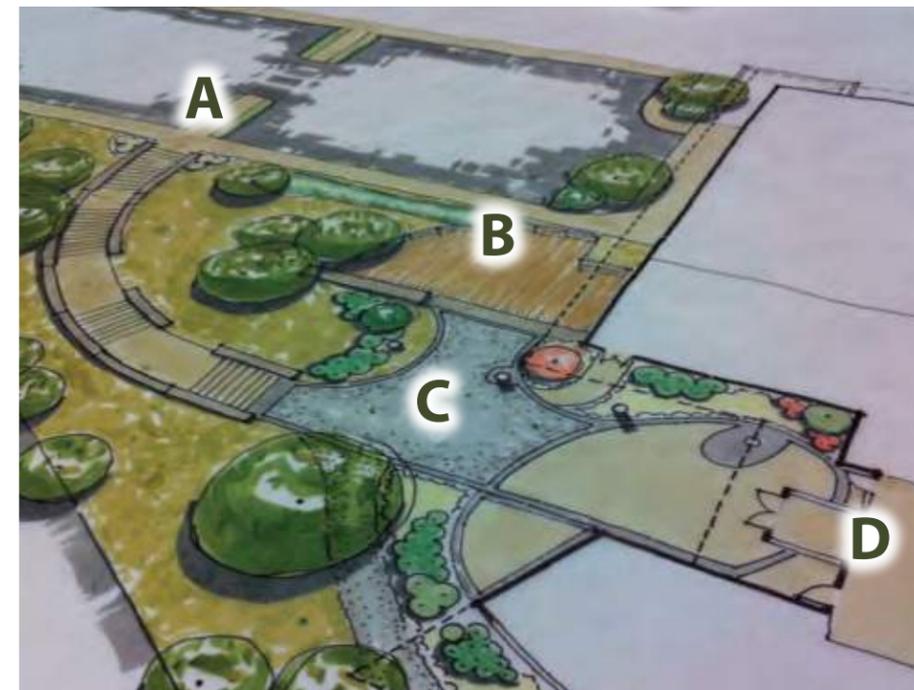
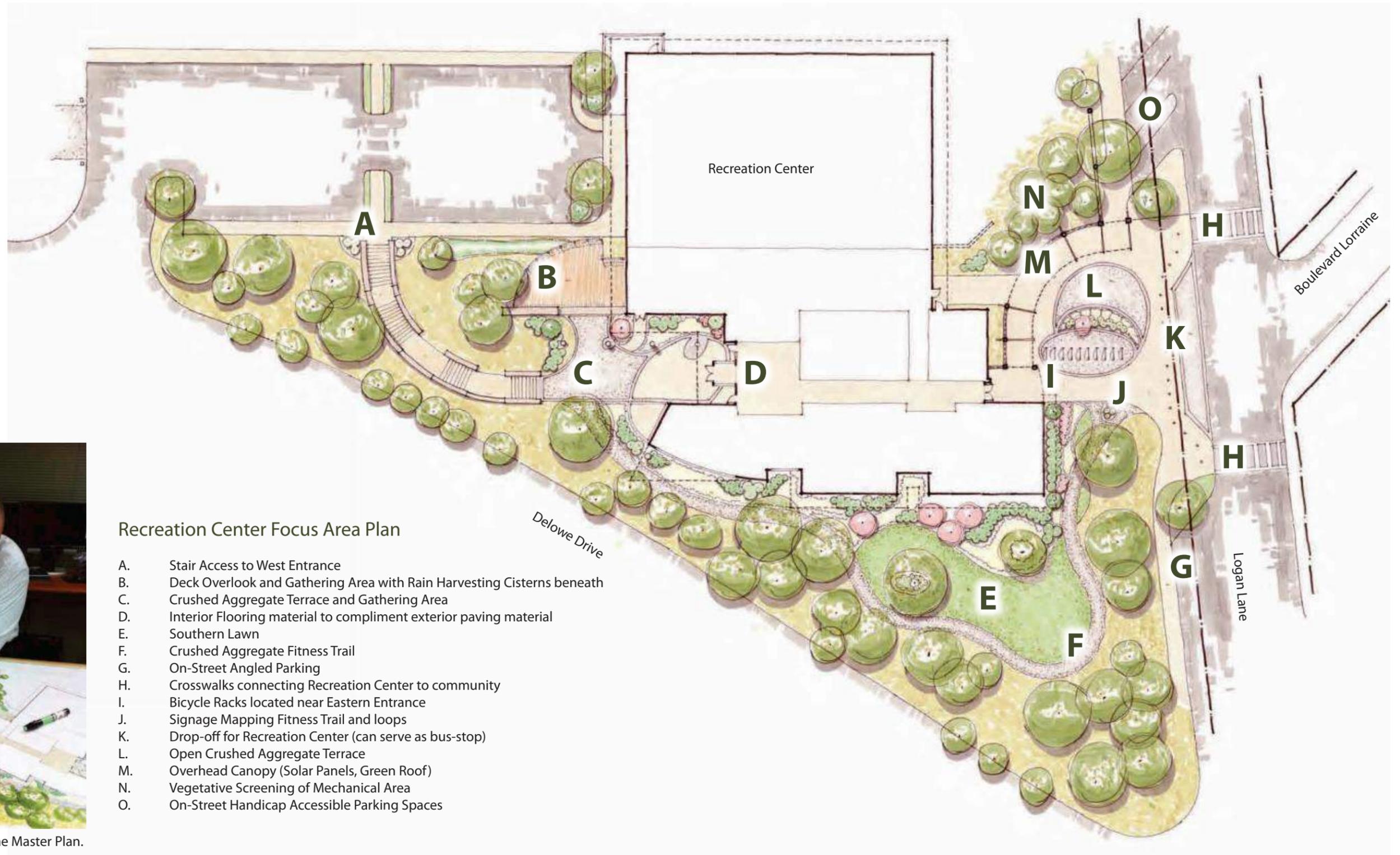


Figure 4-3: West Entrance Plaza Enlargement



Figure 4-4: East Entrance Plaza Enlargement



Recreation Center Focus Area Plan

- A. Stair Access to West Entrance
- B. Deck Overlook and Gathering Area with Rain Harvesting Cisterns beneath
- C. Crushed Aggregate Terrace and Gathering Area
- D. Interior Flooring material to compliment exterior paving material
- E. Southern Lawn
- F. Crushed Aggregate Fitness Trail
- G. On-Street Angled Parking
- H. Crosswalks connecting Recreation Center to community
- I. Bicycle Racks located near Eastern Entrance
- J. Signage Mapping Fitness Trail and loops
- K. Drop-off for Recreation Center (can serve as bus-stop)
- L. Open Crushed Aggregate Terrace
- M. Overhead Canopy (Solar Panels, Green Roof)
- N. Vegetative Screening of Mechanical Area
- O. On-Street Handicap Accessible Parking Spaces



Thomas Nichols helps to render the Master Plan.

Pond Edge Focus Area

The design approach to the Pond area centered around maintaining the natural, picturesque beauty of the existing site. The area was well designed by the original landscape architect, William L. Monroe, Sr. Mostly, this focus area has fallen into disrepair and is in need of some attention and rejuvenation.

The one area that did need some specific design attention was the existing gravel parking area and batting cage facility (see Figure 4-5: Gravel Parking Lot Concept). Currently, there is a pedestrian / vehicular conflict zone as children must cross an unmarked gravel parking area to reach the batting cage from the recreation ball fields. Our design team recommends relocating the batting cage to the north, and orienting it in an ENE direction. This creates adequate space for a well planned gravel parking lot along the southwestern property-line. Pedestrians are now only to enter the designated parking area when arriving or leaving the facility. A proposed Fitness Trail Map and Pond overlook is located just north of the relocated batting cages.

As mentioned before, the design team recommends renovations and repairs to the remainder of the Pond Edge Focus Area. Much of the original granite pond edge wall has fallen into disrepair and needs to be rebuilt. The design team did notice steep grades on the west side of the path circling the pond. Granite rubble walls should be constructed along this edge to prevent further erosion and to help stabilize the slope. The slopes surrounding the pond, specifically the southeastern slope, have become overgrown with invasive species. These species should be removed and replaced with suggested native species (see page 4-8 for a recommended Plant List).

One additional item suggested is the construction of a pier or dock off of the existing island. Community leaders who attended the Charrette brought this need to our group's attention. Rather than create a separate pier on the north end of the pond, the designers decided that incorporating this element at an existing intrusion into the water would help the pond feel less crowded.

Please see the Pond Edge Focus Area Plan on page 4-5 for the location of these specific elements.

Gravel Parking Lot Concept

- A. Proposed gravel parking lot accommodating +/- 25 vehicles
- B. Relocated and reoriented batting cage facility
- C. Proposed Fitness Trail Map and Pond Overlook

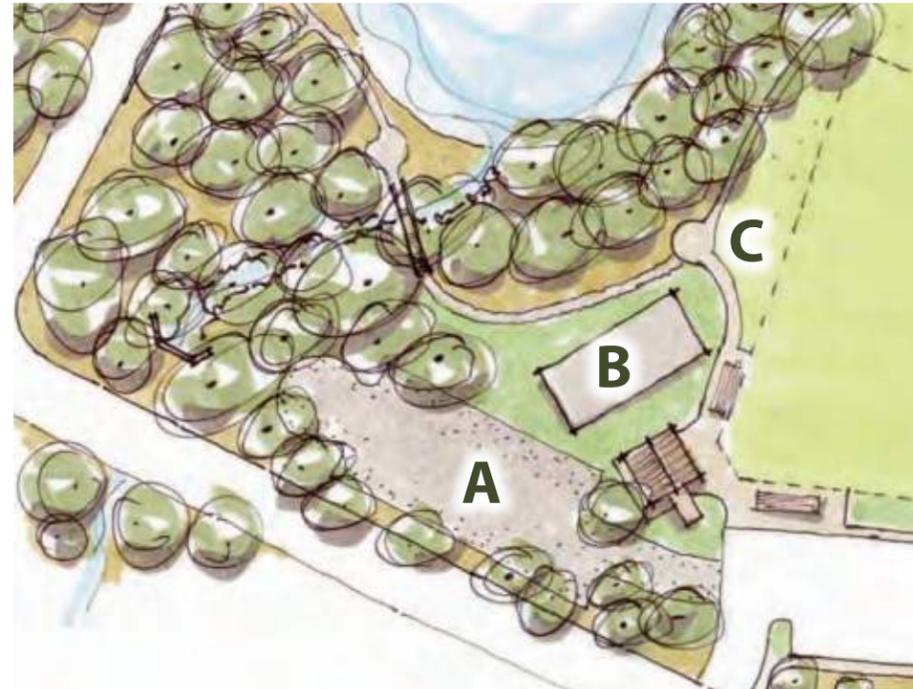


Figure 4-5: Gravel Parking Lot Concept



Pond Edge Concept



Pond Edge Hardline



Charles Sears hardlining the Pond Edge Concept.

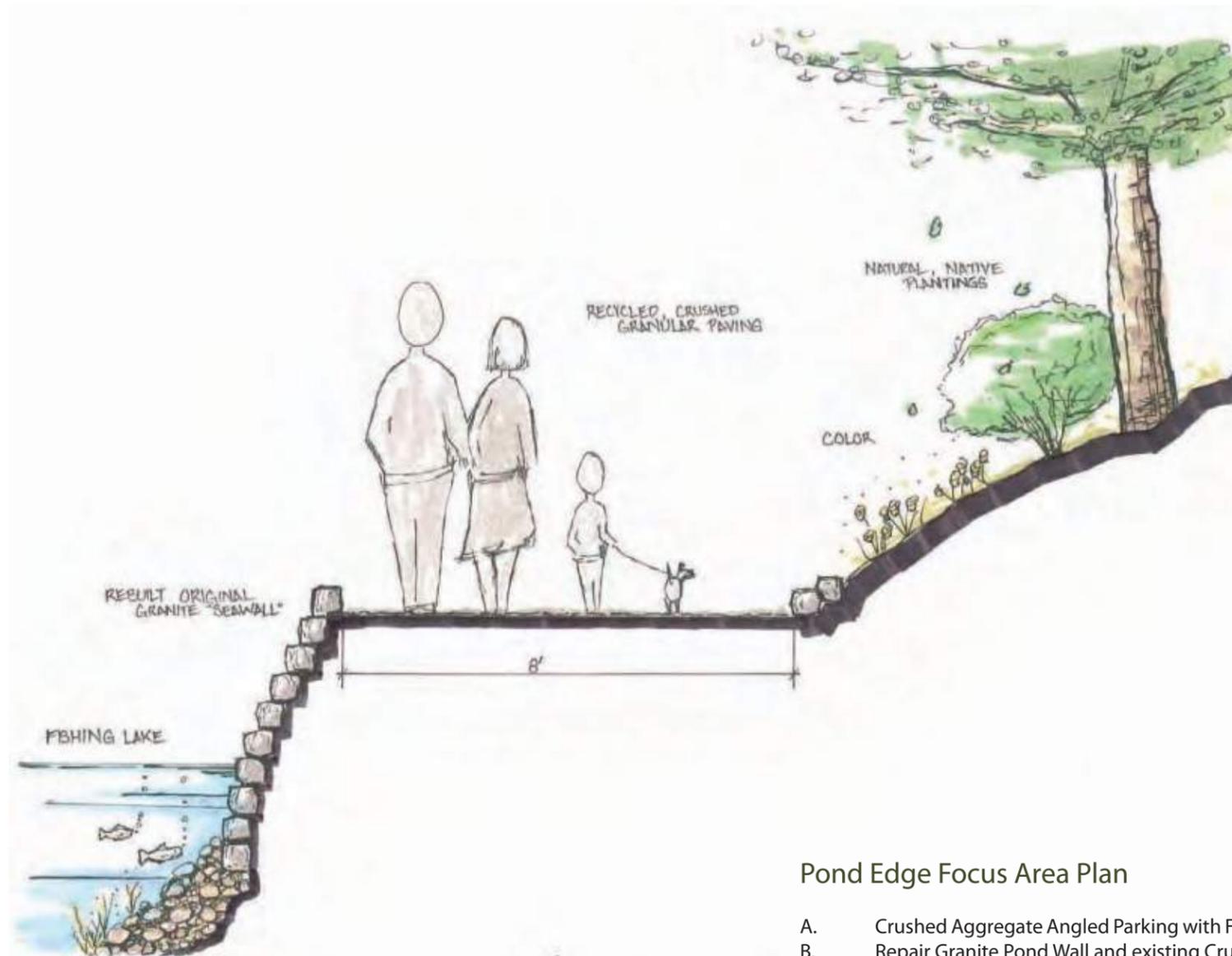
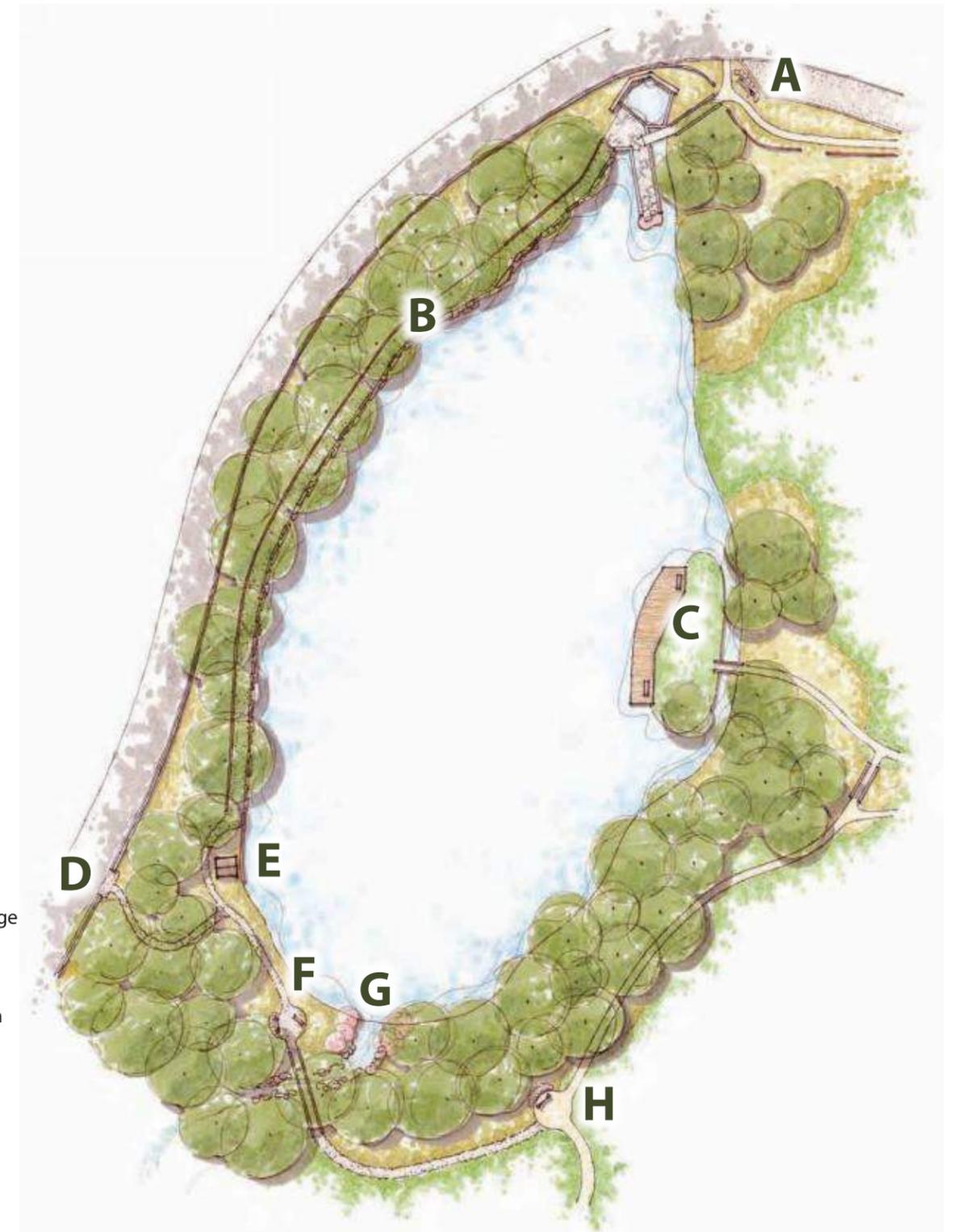


Figure 4-6: Reconstructed Pond Edge Wall and Path

Pond Edge Focus Area Plan

- A. Crushed Aggregate Angled Parking with Fitness Path Signage
- B. Repair Granite Pond Wall and existing Crushed Aggregate Path at Pond Edge
- C. Construct Wooden Pier at Existing Island
- D. Connect Logan Lane to Pond with Crushed Aggregate Path
- E. Repair Irrigation Pump House, extend Pond Wall at pond edge if necessary
- F. Fitness Trail Map at Southern Pond Overlook
- G. Screen spill-way with vegetation and line concrete with granite veneer
- H. Create Upper Pond Overlook with Fitness Trail Signage
- I. Selectively thin invasive vegetation and replant slope with native material



Picnic Focus Area

The acreage surrounding what is referred to as the Master Grill area, or Picnic Area herein, might be the most picturesque acreage on the entire property. Sitting in a valley between the sloping hillside that serves as the western border of the park and a natural bluff where the park's swimming pool is located, the Picnic Area offers a secluded gathering space for the residents of the Adams Park neighborhood. A set of granite steps leads you down into this valley from on-street parking located on Logan Lane. A small concrete footbridge crosses the creek that cascades down rocky bluffs from the north end of the property and feeds the Pond area to the south. Situated in the middle of the valley area are seventeen large wooden picnic tables, arranged like church pews on the gradual slope. A large, newly renovated covered pavilion with a smoking pit and historic granite fireplace frames the north end of the Picnic Area beyond the picnic tables.

When visiting the site, the most evident programmatic challenge is the severe erosion that is occurring underneath the picnic tables in the center of the space. Due to the large canopy of the mature hardwoods that surround the site, high-traffic groundcovers such as turfgrass that would prevent erosion do not receive enough sunlight to survive. This has allowed storm water running off the existing slope on the west of the property to erode the existing top soil, removing the nutrients needed for native groundcovers to seed, while also exposing many of the tree roots creating numerous trip hazards.

The design team was charged with the following tasks:

1. Manage the storm water runoff in a minimally invasive, sustainable way
2. Reconfigure the picnic tables into logical groupings
3. Create a more vibrant space that capitalizes on the natural, picturesque setting

To manage the storm water runoff, the design team implemented two strategies. First, a rock-lined dry creek bed was located at the bottom of the western hillside to collect the majority of the runoff before it runs across the site, and divert it into the existing creek. A second dry creek bed was located at the north end of the site between the picnic tables and the covered pavilion. This will capture the remainder of the runoff, also diverting it into the existing creek, while helping to divide the site into different "outdoor rooms".

The church pew table arrangement was abandoned. In its place, five groups of two tables were arranged along the dry creek at the west of the site. The groups are located on separate, level terraces created by 18" boulder retaining walls. The terracing helps to level the site, thus reducing the velocity at which rainfall will drain across the site and helping to prevent future erosion.

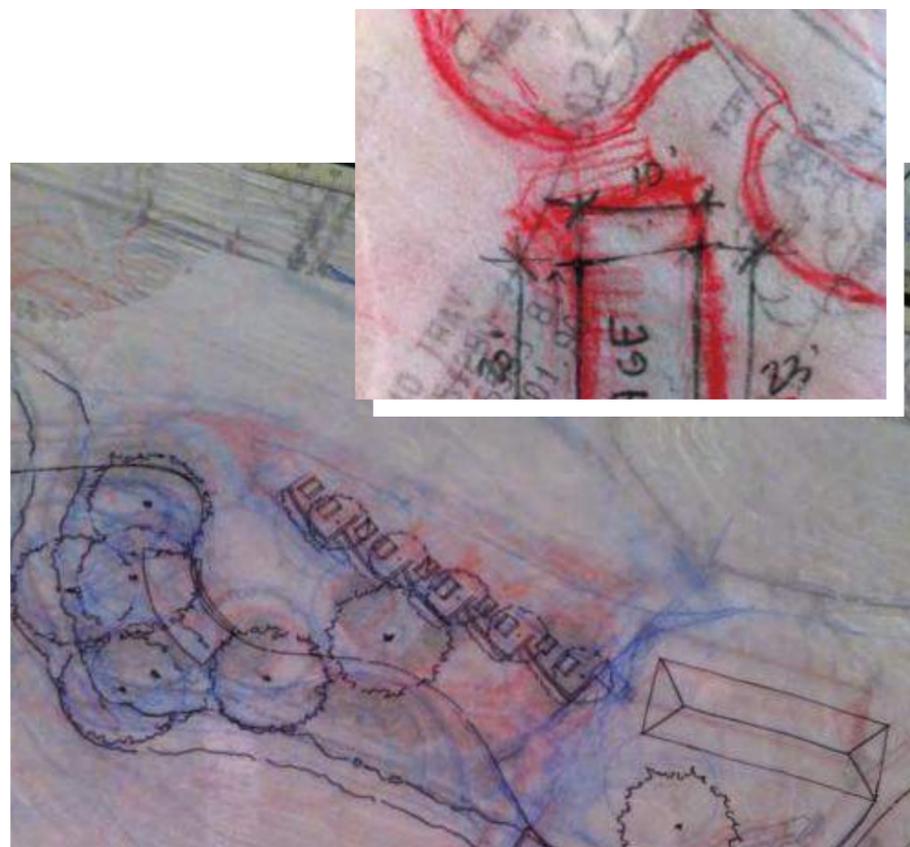
Large swaths of native, lowland vegetation are proposed to be planted along the edge of the existing creek as it flows through the site. This plant material will help filter any rainfall that flows across the site as it drains towards the creek. The design team recommends bringing in supplemental topsoil to cover the exposed roots and create a healthy soil profile in which to plant the proposed lowland plant material. In the areas that are to remain open, the design team recommends bringing in hardwood mulch to serve as a groundcover. This material can be recycled from downed trees in the surrounding area.

The grouping of two picnic tables at each terrace was intentional. This layout creates intimate seating and gathering spaces if multiple groups wish to use the Picnic Area at the same time. However, their close proximity to each other also allows one group to use all the tables in one cohesive unit. Versatility is the key to this design.

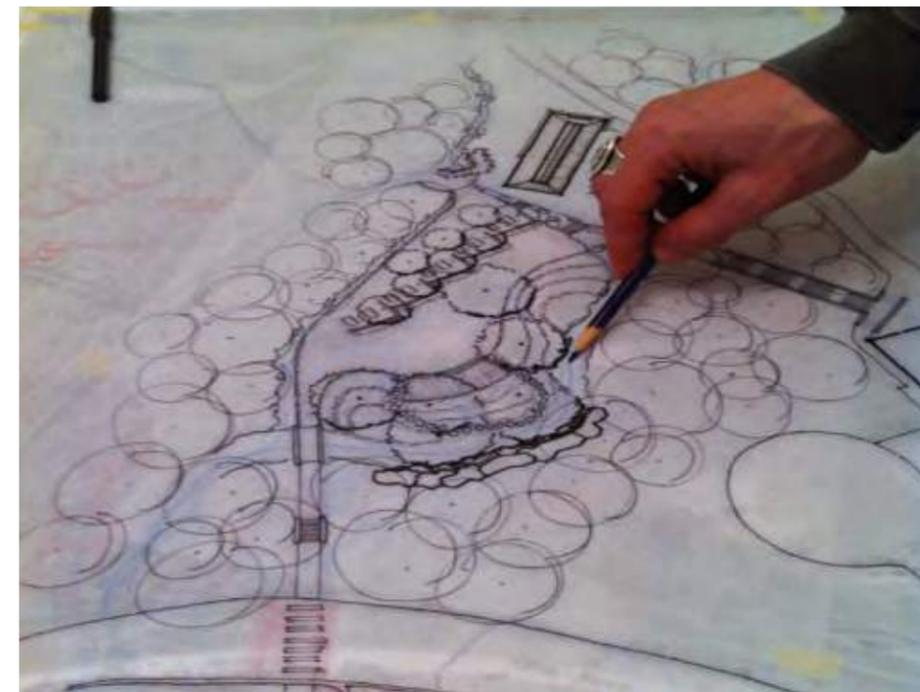
The design team also recommends demolishing the existing elevated concrete stage at the center of the site. Instead, a larger, lower stage constructed out of pressure treated lumber or a composite wood material is proposed. This stage would be located in the "cup" of the existing rock bluffs at the southeastern corner of the site. These bluffs and existing trees create a natural amphitheater that is perfect for such a gathering space. By keeping the deck a maximum of 24" off the ground, the stage will not need any handrails, keeping the site open and allowing users to sit comfortably on all sides. The decking material shall be placed on piers which allows any storm water runoff to flow seamlessly around and underneath this structure.



Louie Northern developing the Picnic Area Concept.



Picnic Focus Area Concept Development



Picnic Area Hardline.

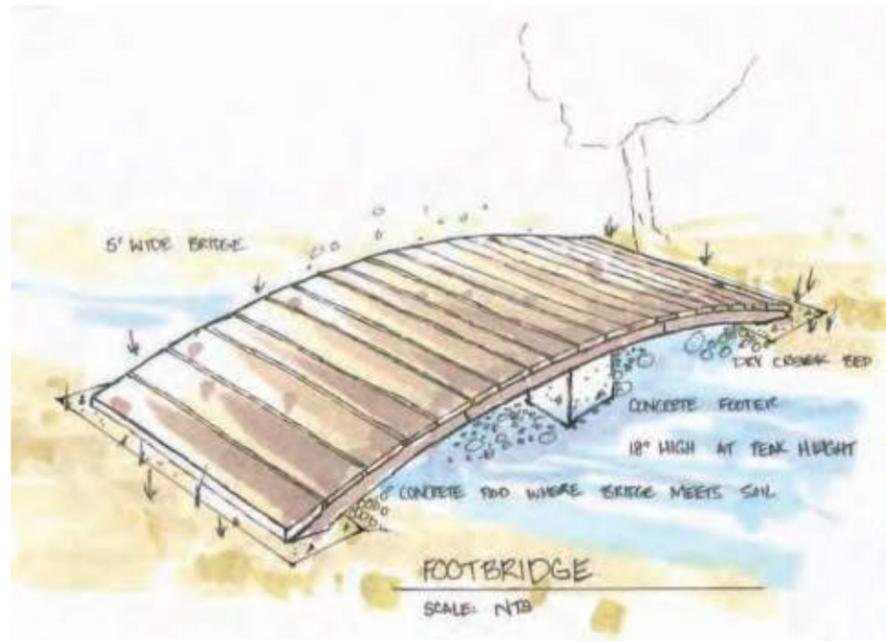


Figure 4-7: Wooden Footbridge over dry creek bed

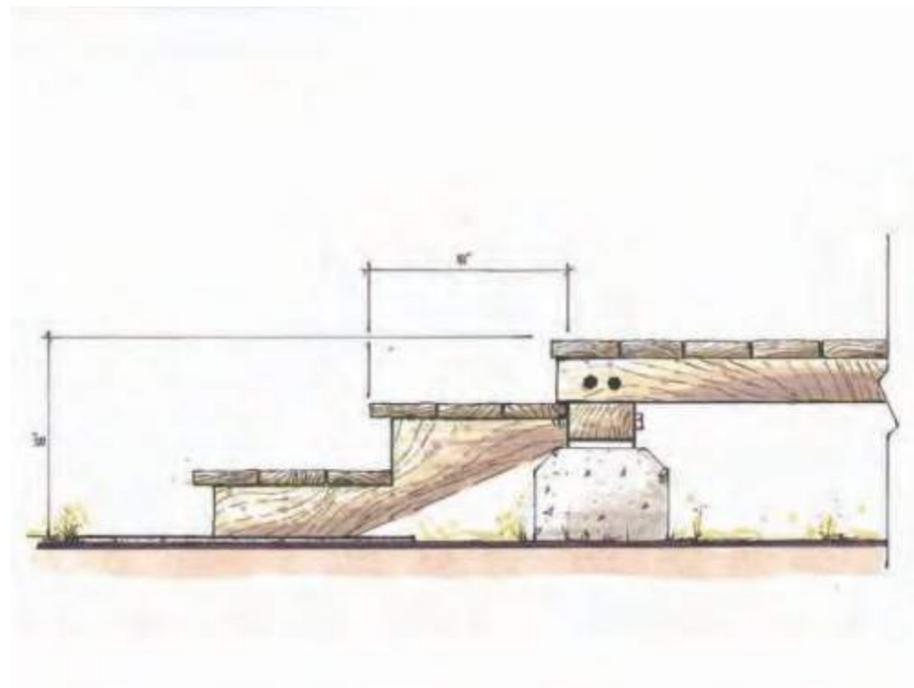
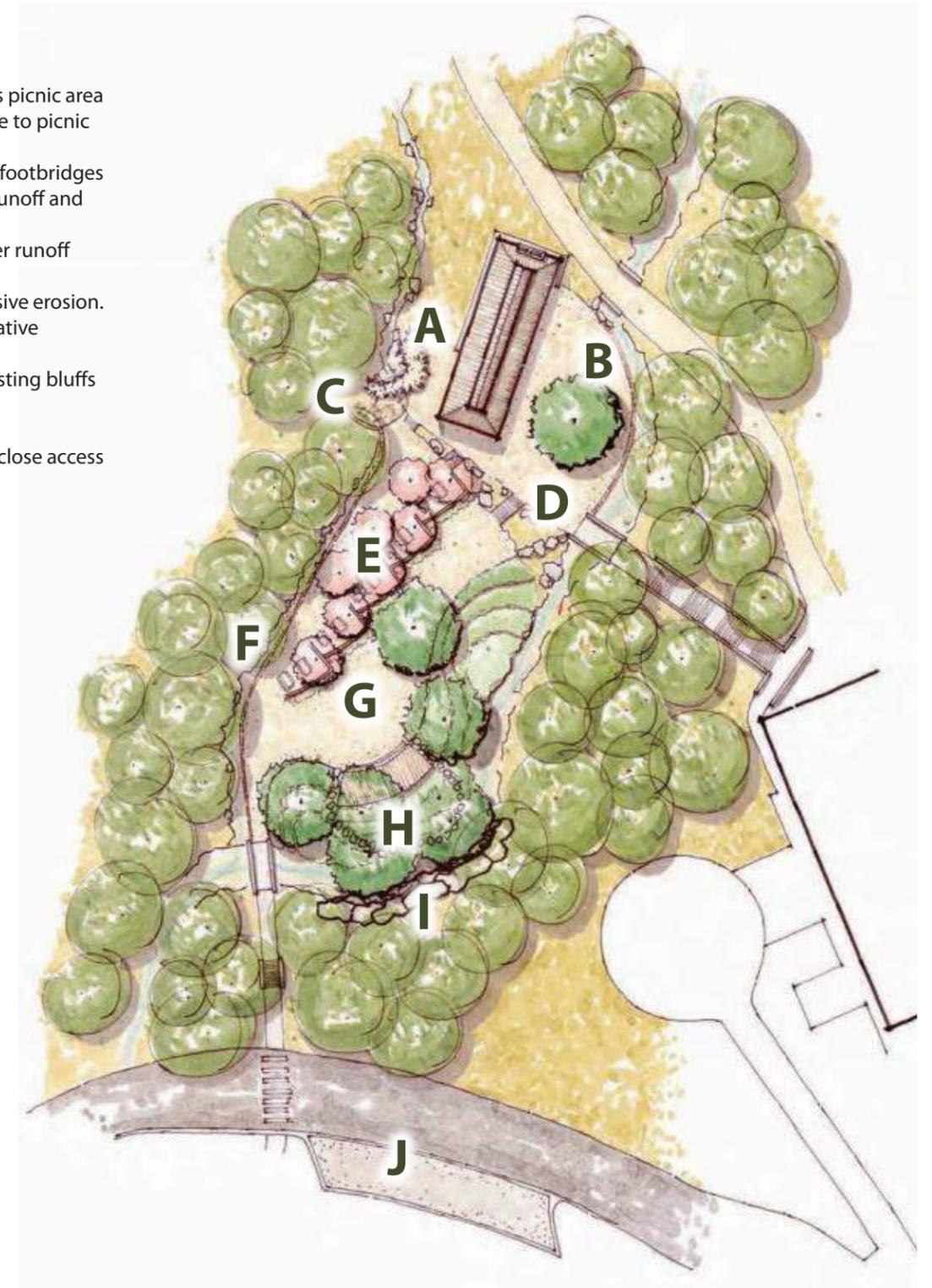


Figure 4-8: Steps to proposed Stage

Picnic Focus Area

- A. Screen existing culvert headwall with native evergreen vegetation
- B. Line stream edge with boulders to prevent erosion as stream enters picnic area
- C. Create granite terrace at base of ramp providing entrance sequence to picnic area from the west
- D. Create rock lined swale collecting storm water runoff with wooden footbridges
- E. Terrace groups of two picnic tables using boulder walls to reduce runoff and create smaller areas for gathering
- F. Create rock-lined swale at base of steep slope to collect storm water runoff before it washes over picnic areas
- G. Restore topsoil and grade that has been washed away due to excessive erosion. Utilize hardwood mulch as groundcover in high-traffic areas and native vegetation in low-traffic areas
- H. Create wooden stage on piers at south end of picnic area using existing bluffs as backdrop
- I. Existing Bluffs
- J. Proposed on-street angled parking make of crushed aggregate for close access to picnic area



Chapter 5: Architecture and Interiors Recommendations

Coordinated Approach

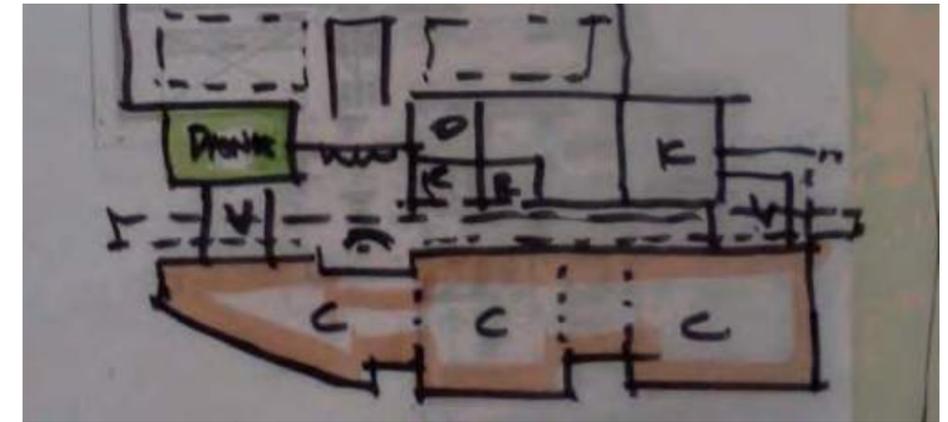
The Architecture / Interiors Teams worked closely together to provide a solution that would be sustainable and human-centric. The existing program was studied and the required spaces were met in a more sustainable manner.

Architecture & Interiors Solution

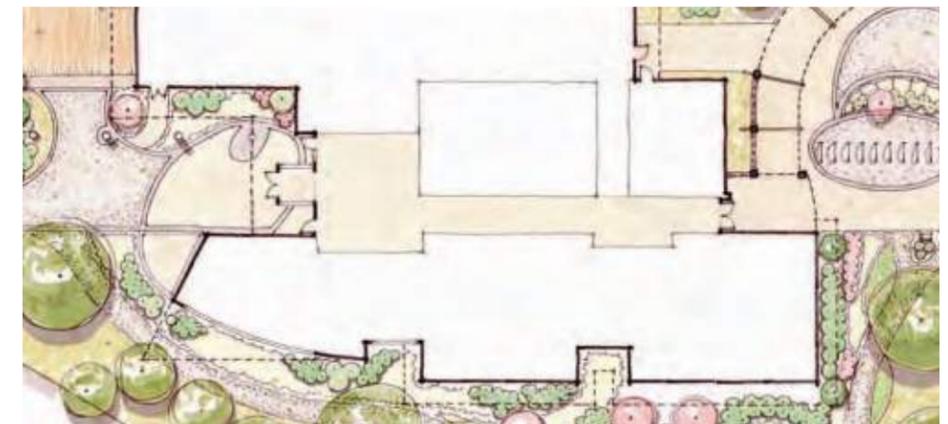
The existing entrances were improved through the addition of vestibules to reduce air infiltration, and exterior elements that tie the center to the park and were discussed with the Landscape Team. The entrances were designed to enhance the approach and connection for both the neighborhood users and for visitors.

An "O" shaped circulation path was recommended to provide flexibility, a hierarchy of use (service corridor and main corridor), and a more secure pattern within the center with the reception desk as main security station located at the node of the two primary paths. Spaces were consolidated and connected to allow for the formation of a grand multi-purpose space that can function as an event space for the neighborhood. Moreover, the services of restrooms, water fountain, and concessions were consolidated off of a new service corridor, providing a clear distinction from the main axis and an easy flow between the gym and the recreation center. This also reduces the use of the main corridor and lobby so that these corridors may serve community functions and frees hall walls on main corridor for artwork and wayfinding. Therefore, two spatial zones are provided: one for sports and the other for community. The reception area serves as security point, as well as welcome station. Universal design was a focus and ADA accessibility guidelines were followed through the addition of an elevator that is easily accessed by the service corridor and the enhanced accessible entrance on the east side of the building. All doors are a minimum of 3'-0 and all interior finishes, fixtures, and equipment shall follow ADA guidelines.

A conference room was added to the West Entrance. This was part of the existing program requirements, and the goal of the team was to decrease the footprint, and reduce the destruction to the site. Although the addition is different in form, the existing materials and regulating lines are followed so as not to take away from the beauty of the existing buildings, and to maintain the overall architectural character of the buildings. The addition reinforces the spine of the basic plan, provides a central location for security and welcome, and enhances the visual appeal of the entrance. The new addition is a box that has been sliced away on one side. Its overhead plane serves as shade for the summer sun, and also serves as an icon that will be viewed from the road, providing the community with something to be proud of.



Floor Plan concept development during Charrette.



Proposed building footprint integrated into site.



Figure 5-1: Process from Concept to Final Floor Plan

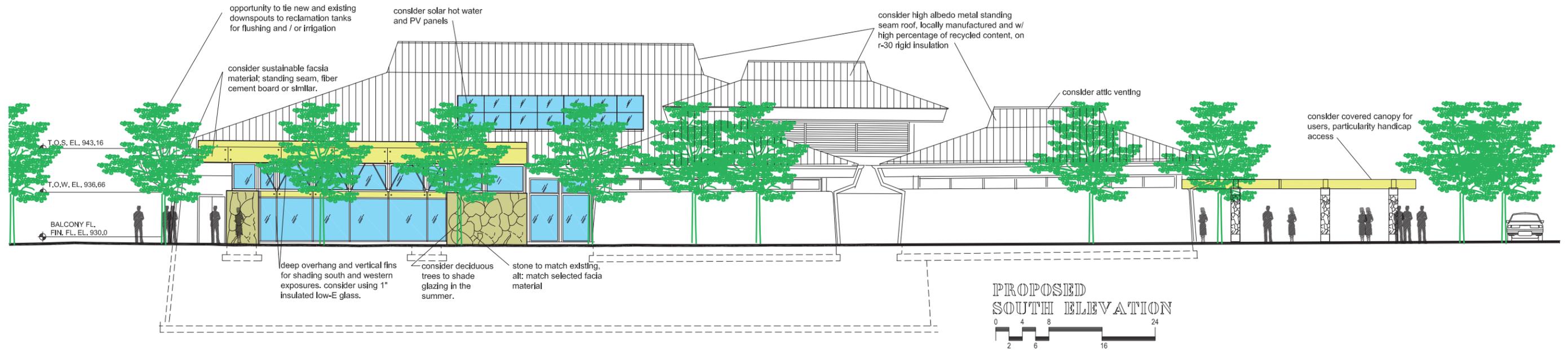


Figure 5-2: North Elevation of Building



Figure 5-3: East Elevation of Building

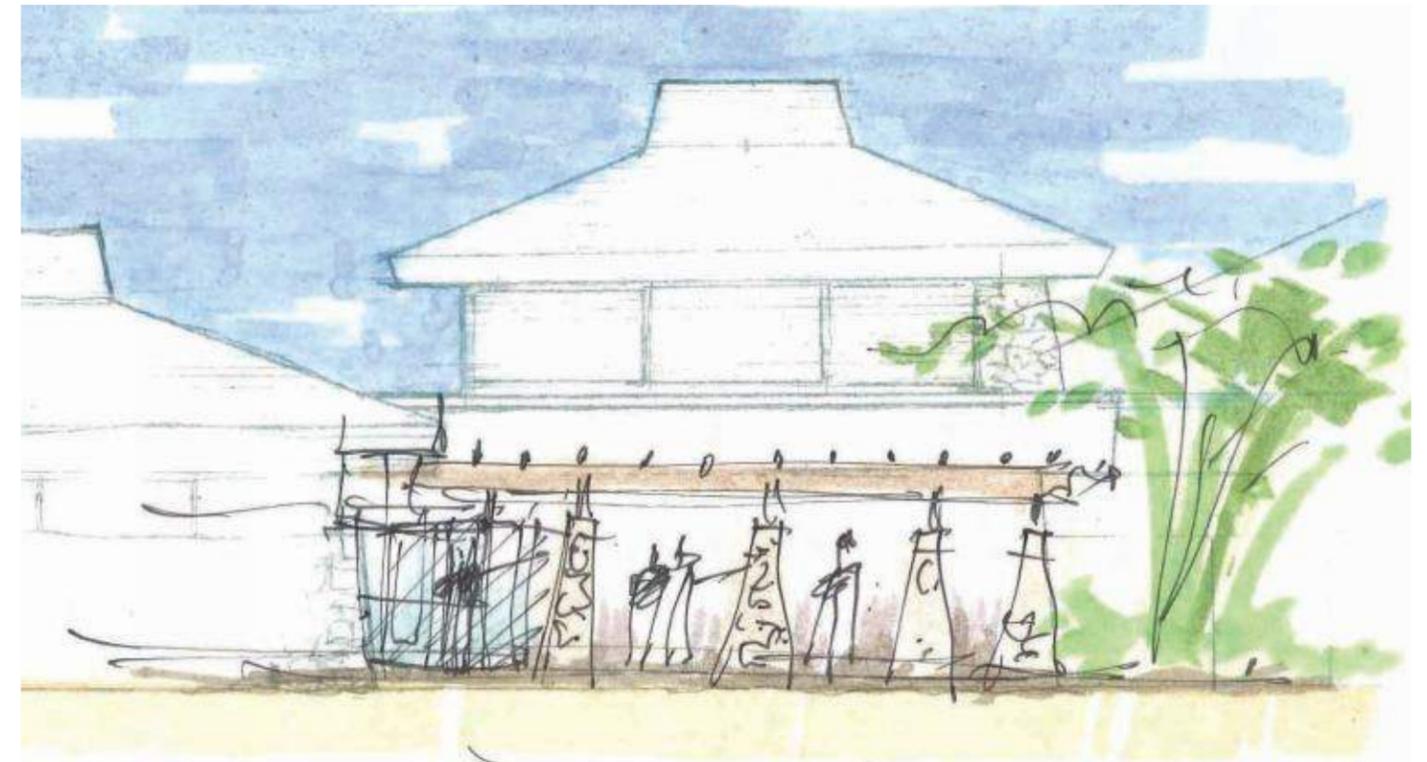


Figure 5-4: West Elevation of Building

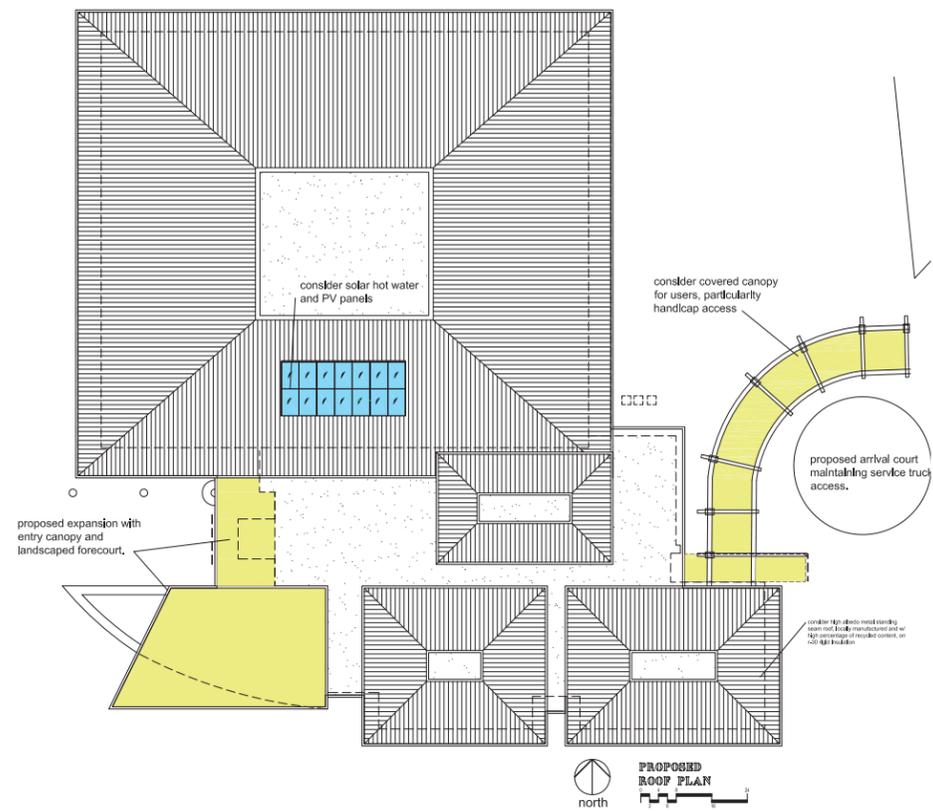


Figure 5-5: Finished Roof Plan

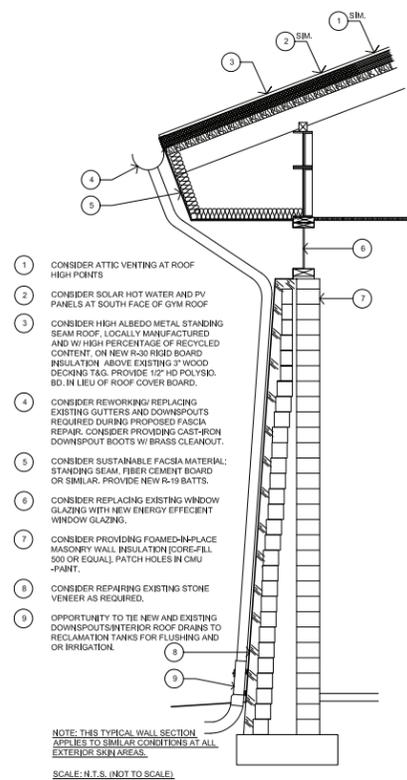


Figure 5-6: Exterior Wall Section

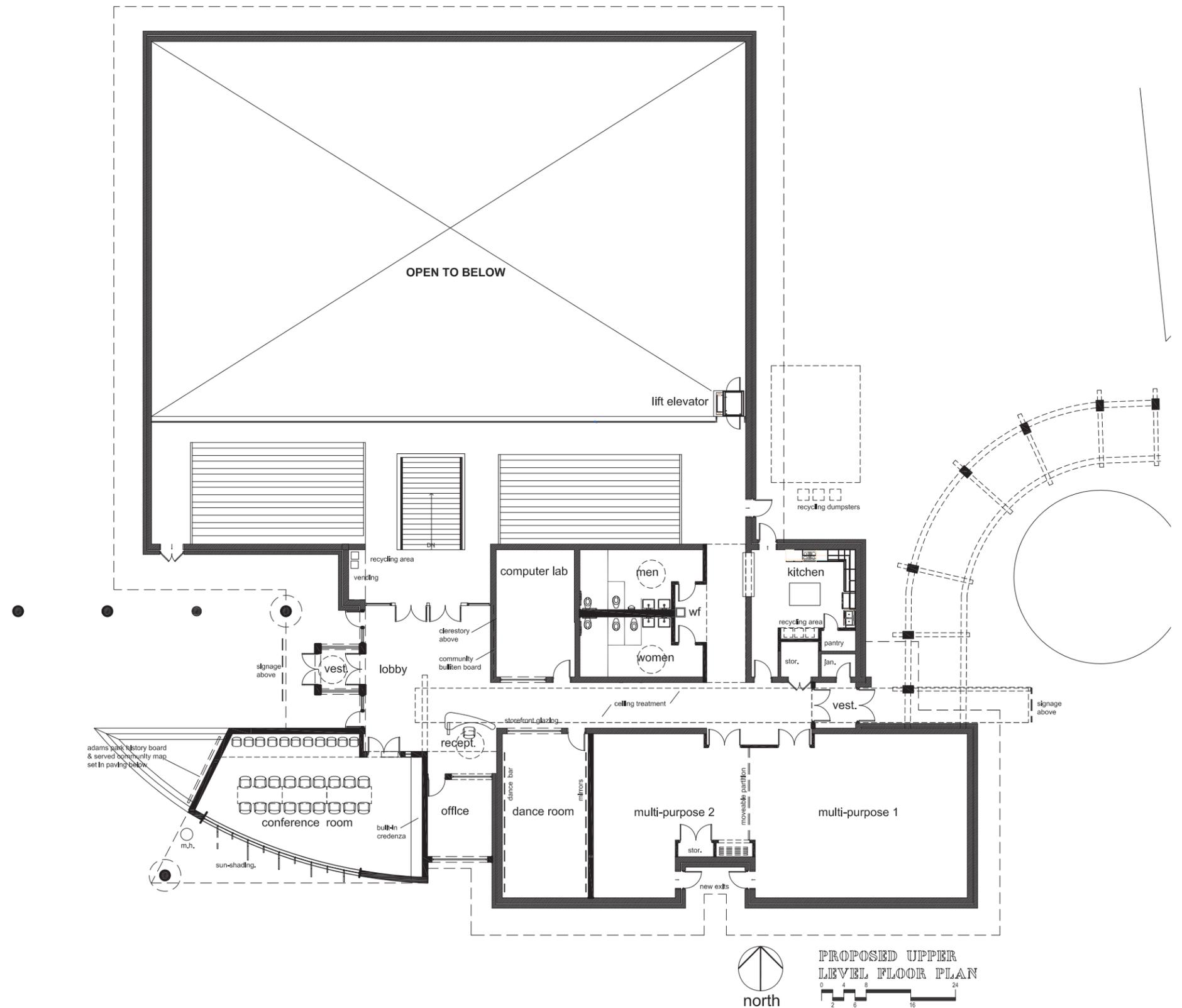


Figure 5-7: Finished Floor Plan



Figure 5-8: Sketch of Reception Area

The color theory recommended for the center is based on nature...natural textures, wood, rocks, leaves, thus bringing the outside in. This connection to nature is also accomplished visually through the strong axis that runs through the building and is linked to the exterior paths and new proposed terraces of Adams Park. All rooms have been redistributed to have access to natural daylight, including the internally located computer room through the use of glass storefronts along the main corridor. All recommended finishes are selected with the health, safety, and welfare of the general public in mind.

The "O" shaped circulation path provides easy access throughout the center. The use of wayfinding techniques including signage and color bands are incorporated throughout the center, providing visual interest and an integrated sense of community. A chair rail is utilized along hallway walls and lobby to provide continuity within the center, as well as visual variety. Hallway walls are shown with an art band that provides a continuous and defined location for hanging community artwork. In the Lobby, a new community bulletin board provides a focal point and location for all to connect. The opening up of the center, and the provision of a central reception desk will assist with security and provide a welcoming entry experience for the visitor.

Through the use of axis, space planning, circulation enhancement, material / color selection, wayfinding, and visual devices for community pride, we have endeavored to elevate the discourse while recognizing the practicalities of budget and reality.



Figure 5-9: Sketch of Lobby Area



Figure 5-10: Sketch of Concessions Area

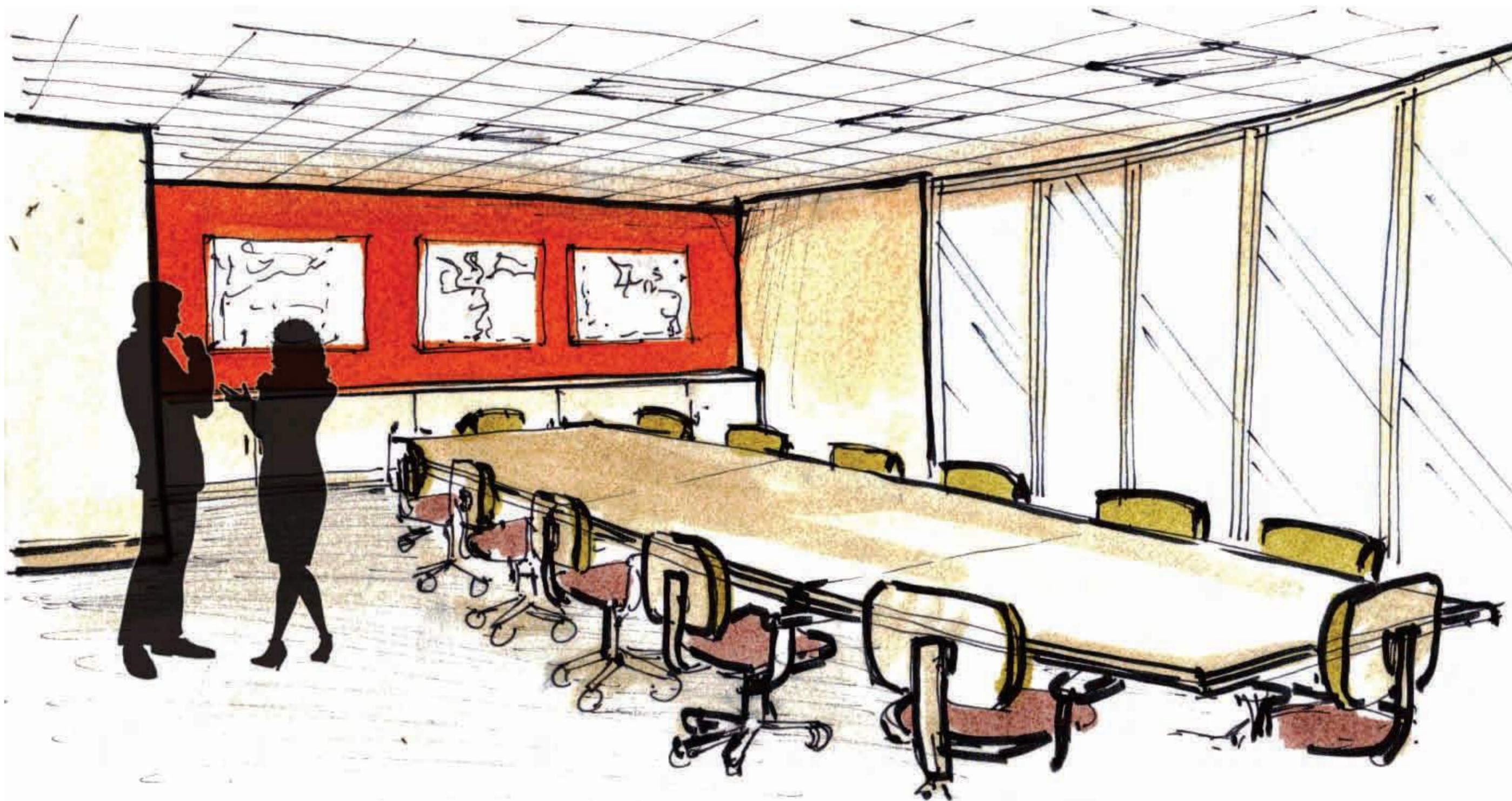


Figure 5-11: Sketch of Conference Room

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Chapter 6: Interior Finish & Material Recommendations

An Interior Solution

Selecting the Right Finishes:

Selecting interior finishes and materials for a public recreation center requires careful consideration. Materials such as flooring, wall coverings, restroom finishes, ceilings, etc. need to be selected not only for their visual beauty, and appropriateness, but also for their durability, low maintenance and longevity. Additionally, these materials should be as sustainable as possible, without sacrificing function or being “greenwashed”. Since the finishes will be the actual parts of the building which come in direct physical contact with users, the finishes also need to be mindful of the health, safety and welfare of the of the general public. We have recommended materials for Adams Park that are visually exciting, sustainable, and durable, so the Owner can get years of quality use from the products.



The following interior material and finish recommendations were made with careful consideration to the individual functions of

- spaces within the facility;
- the high use of the facility and
- the sustainable features that are appropriate for function and use.

In making sustainable finish selections there are a variety of attributes that should be taken into consideration:

- Material content of the product [from rapidly renewable materials to recycled content]
- Location of product manufacturing
- Volatile organic compounds emitted by the product
- Volatile organic compounds emitted by the installation process
- Reclamation possible at the end of the product's life
- Life cycle analysis/cost [an emerging means of measure]

Each of these attributes in combination with the facility needs are the basis for the recommendations that follow. The recommendations are divided into separate surface types in order to provide a succinct set of groupings for simple review and consideration. These groups have levels of material recommendations, divided into three categories: Good, Better and Best with "Best" being our highest recommendation level and "Good" being our minimum level recommendation.

Flooring

Corridors/ Lobby

these are high traffic areas that see the most consistent use each day in a recreation center

BEST – Rapidly Renewable Products - Bamboo, Lyptus

When specified correctly, (taking into consideration hardness and surface finishes that are equivalent to oak flooring) bamboo and lyptus flooring each can make an attractive, stable, and durable flooring in public areas - one that is sustainable, durable and reasonable to maintain.

Potential manufacturers may include:

Bamboo: Plyboo

Lyptus: Weyerhaeuser Lyptus



Drawbacks for a renovation using these materials may include necessary modification of doorway thresholds and material to material transitions due to the thicknesses of the products.

BETTER – Linoleum (Rapidly Renewable Product)

Linoleum is comprised of natural ingredients including linseed oil, rosins and wood flour on a jute backing. It is a surface that becomes more resilient over time and is recyclable at the end of its life. naturally inherent antimicrobial and antistatic properties offer improved indoor air quality for high traffic environments.

Potential manufacturers may include:

Forbo, Armstrong

GOOD – Solid Vinyl Tile

If maintained properly, solid vinyl can have an extended lifespan, prolonging its entry to the landfill. Compared to VCT (Vinyl Composition Tile) solid vinyl is more flexible and far less susceptible to cracking. At this time it has limited recyclability, but options are being researched extensively by the industry to improve this. Solid vinyl flooring offer more support under foot and have a less negative effect on overall physical health. A variety of manufacturers make sustainable luxury vinyl flooring options that meet a variety of applications all while meeting budget, durability and maintenance needs.

Regardless of type of flooring used in any of these scenarios we recommend a minimum of 6'-0" of walk-off carpet at each major entry point. this would be increased to 10'-0" if pursuing LEED using version 3.

Multi-purpose Space

recommendations for this area are based on the "dance studio" as one of may functions taking place in the multipurpose rooms.

BEST – Rapidly Renewable Products - Bamboo, Lyptus or Cork

As noted for the Corridors and Lobby, bamboo and lyptus flooring each can make an attractive, stable, and durable flooring in public areas - one that is sustainable, durable and reasonable to maintain. Though cork is not suitable for heavy duty areas, we have added it here as it is very appropriate for a multipurpose space. Cork is very effective for absorbing sound while giving a cushioned feel underfoot. If considering cork, we strongly recommend tiles over rolled product to help facilitate replacement of small areas of worn flooring.

Potential manufacturers may include:

Bamboo: Plyboo

Lyptus: Weyerhaeuser Lyptus

Cork: Ceres PVC free flooring

BETTER – Linoleum (Rapidly Renewable Product)

Linoleum is comprised of natural ingredients including linseed oil, rosins and wood flour on a jute backing. It is a surface that becomes more resilient over time and is recyclable at the end of its life. naturally inherent antimicrobial and antistatic properties offer improved indoor air quality for high traffic environments.

Potential manufacturers may include:

Forbo, Armstrong

GOOD – Solid Vinyl Tile

If maintained properly, solid vinyl can have an extended lifespan, prolonging its entry to the landfill. Compared to VCT (Vinyl Composition Tile) solid vinyl is more flexible and far less susceptible to cracking. At this time it has limited recyclability, but options are being researched extensively by the industry to improve this. Solid vinyl flooring offer more support under foot and have a less negative effect on overall physical health. A variety of manufacturers make sustainable luxury vinyl flooring options that meet a variety of applications all while meeting budget, durability and maintenance needs.

****If the dance studio is a separate stand alone room, then our recommendation for BEST would be modified to the following for a renovation****

BEST – Rubber Sport Impact Flooring

A 100% rubber impact flooring designed for extensive cardio activity will provide comfort under foot for dancers while remaining maintainable, durable and environmentally friendly options.

Potential manufacturers may include:

Mondo

BETTER - Vinyl Sport Impact Flooring

Vinyl Sport Impact Flooring flooring designed for extensive cardio activity will provide comfort under foot for dancers while remaining maintainable and durable.

Computer Room

BEST – Electrostatic Discharge (ESD) Flooring

ESD is ideal in areas where static discharge can cause problems (i.e. any area where multiple computers are in use at once). ESD flooring is available in a variety of carpet



and vinyl solutions. Regardless of solution we highly recommended that tiles over rolled goods to help facilitate in replacement of small areas of worn flooring..

BETTER – Carpet

Commercial-grade carpet is also an effective solution for this space. There are many manufacturers who offer sustainable products that can meet this need.

GOOD – Solid Vinyl Tile

If maintained properly, solid vinyl can have an extended lifespan, prolonging it's entry to the landfill. . A variety of manufacturers make sustainable luxury vinyl flooring options that meet a variety of applications all while meeting budget, durability and maintenance needs.

Gym

The flooring in this space is in good condition, and we recommend that existing be kept and refinished/restriped using low VOC paints and polyurethane.

If the floor needed to be replaced we would recommend considering reinstalling a floating floor using an engineered bamboo sport floor for the wear layer, finished & striped using low VOC paints and polyurethane.

Potential manufacturers may include:
Plyboo

Kitchen

The flooring in this area needs to withstand food and drink spills, including grease from cooking equipment, while remaining durable and easy to maintain.

BEST – Epoxy Flooring

A high performance seamless, polymer provides a durable surface that is chemical, abrasion and impact resistant; easy to clean and can incorporate an integrated base for ease of cleaning and meeting health department standards. Products are available that contain recycled materials and is environmentally friendly.

Potential manufacturers may include:
Stonhard

BETTER – Quarry Tile

A standard for many years, in combination with an epoxy grout, quarry tile can provide a durable flooring that will last years. Several manufacturers make quality sustainable quarry tile products.



GOOD – Solid Vinyl Tile

If maintained properly, solid vinyl can have an extended lifespan, prolonging it's entry to the landfill. . A variety of manufacturers make sustainable luxury vinyl flooring options that meet a variety of applications all while meeting budget, durability and maintenance needs.

Restrooms/ Locker Rooms

Flooring in these areas should be impervious to human waste spills, easy to maintain and durable.

BEST – Epoxy Flooring

A high performance seamless, polymer provides a durable surface that is chemical, abrasion and impact resistant; easy to clean and can incorporate an integrated base for ease of cleaning and meeting health department standards. Products are available that contain recycled materials and is environmentally friendly.

Potential manufacturers may include:
Stonhard

BETTER – Ceramic or Porcelain Tile

A standard for many years, in combination with an epoxy grout, tile can provide a durable flooring that will last years.

GOOD – Solid Vinyl Tile

If maintained properly, solid vinyl can have an extended lifespan, prolonging it's entry to the landfill. . A variety of manufacturers make sustainable luxury vinyl flooring options that meet a variety of applications all while meeting budget, durability and maintenance needs.

Offices

BEST – Carpet tile

Commercial-grade carpet tile is an effective solution for this space for both comfort and acoustics. Special care should be taken in fiber selection. Solution Dyed Type 6,6 is the current standard for high use environments. There are many manufacturers who offer sustainable products with high recycled content both in the backing and the yarns along low or zero VOC installation processes.

BETTER – Linoleum (Rapidly Renewable Product)

Linoleum is comprised of natural ingredients including linseed oil, rosins and wood flour



on a jute backing. It is a surface that becomes more resilient over time and is recyclable at the end of it's life. naturally inherent antimicrobial and antistatic properties offer improved indoor air quality for high traffic environments.

Potential manufacturers may include:
Forbo, Armstrong

GOOD – Solid Vinyl Tile

If maintained properly, solid vinyl can have an extended lifespan, prolonging it's entry to the landfill. . A variety of manufacturers make sustainable luxury vinyl flooring options that meet a variety of applications all while meeting budget, durability and maintenance needs.

Cafeteria/ Dining

Flooring in this area should withstand food and drink spills and be easy to maintain and very durable.

BEST – Linoleum (Rapidly Renewable Product)

Linoleum is comprised of natural ingredients including linseed oil, rosins and wood flour on a jute backing. It is a surface that becomes more resilient over time and is recyclable at the end of it's life. naturally inherent antimicrobial and antistatic properties offer improved indoor air quality for high traffic environments.

Potential manufacturers may include:
Forbo, Armstrong

BETTER – Solid Vinyl Tile

If maintained properly, solid vinyl can have an extended lifespan, prolonging it's entry to the landfill. . A variety of manufacturers make sustainable luxury vinyl flooring options that meet a variety of applications all while meeting budget, durability and maintenance needs.

GOOD – Vinyl Composition Tile (VCT): a variety of manufacturers make options that incorporate recycled materials.

Ceilings

There are several key components for ceilings in recreation spaces that help contribute to the overall sustainability of the facility.

- **Acoustics** - for spaces that are a series of hard surfaces, ceilings are sometimes one of the few areas that help reduce rising noise levels. The noise reduction coefficient (NRC) rating helps to evaluate these attributes.
- **Light Reflectance** - High Light Reflectance (LR) ceilings and systems can provide the same level of illuminance with fewer luminaires which can assist in reducing lighting and HVAC energy costs.
- **Antimicrobial** - in an environment that has a constant stream of people day in and day out it is prudent to incorporate antimicrobial properties in the products to assist in inhibiting microbial growth.
- **Material Content** - Recycled and renewable raw materials reduce consumption of energy and resources without diminishing the long-term performance of our products. Acoustical Wood Ceilings, Mineral Fiber Ceiling tile, Drywall and the systems to hang them can have in excess of 60% recycled content, and can be recycled at the end of their lifespan.

Corridors/ Lobby

It is anticipated that the ceiling through these areas may be utilized as an architectural expression developed to emphasize the relationship between the exterior and the interior of the facility. The BEST scenario illustrates this option. All options anticipate access above the ceiling is necessary to maintain equipment and systems.

BEST – Acoustical Wood Ceiling Panel / Premium Acoustical Ceiling Tile

As decorative elements wood ceilings should also perform. We recommend a perforated or slat ceiling with acoustical backer to achieve a minimum NRC of .70 for public spaces. The wood should be urea formaldehyde free and can be specified as FSC and/or fire-rated. As wood ceilings are a premium product, we recommend this be used in combination with a mineral fiber acoustical tile with an equal or greater NRC value. See below for additional traits of this ceiling type.

Potential manufacturers may include:
Armstrong, USG

BETTER – Premium Acoustical Ceiling Tile w/ Rapidly Renewable Content:

Ceiling tile with rapidly renewable content that has a min. NRC of .80, min. LR of .75, is



sag resistant and anti-microbial is recommended. Cradle2Cradle products are available.

Potential manufacturers may include:
Armstrong

GOOD – Mineral Fiber Acoustical Ceiling Tile

Standard (mineral fiber) ACT that has a minimum of 50% recycled content, minimum NRC or .60, is sag resistant and anti-microbial is recommended. Products meeting these criteria exist at all price points.

Potential manufacturers may include:
Armstrong, USG, Celotex

Gym

The ceiling in this area is beautiful and in good condition, and we recommend that the existing remain with minor repairs.

Kitchen

the ceiling should be washable, moisture and mold resistant and around hood, heat-resistant

BEST – Scrubbable Ceramic Acoustical Ceiling Tile w/ Stainless Steel Panels at Hood
Scrubbable Ceramic ACT that has a minimum of 50% recycled content, minimum NRC or .50, minimum LR of .80 is sag resistant, impact resistant and anti-microbial is recommended.

Potential manufacturers may include:
Armstrong, USG, Celotex

BETTER – Scrubbable Ceramic Acoustical Ceiling Tile w/ Stainless Steel Panels at Hood
Scrubbable Ceramic ACT that has a minimum of 50% recycled content, minimum NRC of .55, is sag resistant and anti-microbial is recommended.

Potential manufacturers may include:
Armstrong, USG, Celotex

GOOD – Drywall:

Painted moisture resistant drywall is appropriate where it doesn't inhibit access to mechanical systems in plenum space. Paint to be anti-microbial.

Restrooms/ Locker Rooms

ceiling in these areas needs to be moisture & mold resistant



BEST – Drywall:

Painted moisture resistant drywall is appropriate where it doesn't inhibit access to mechanical systems in plenum space. Showers should be painted with a scrubbable finish. Paint to be anti-microbial.

BETTER – Premium Acoustical Ceiling Tile w/ Rapidly Renewable Content:

Ceiling tile with rapidly renewable content that has a min. NRC of .80, min. LR of .75, is sag resistant, impact resistant, and anti-microbial is recommended. Cradle2Cradle products are available.

Potential manufacturers may include:
Armstrong

GOOD – Mineral Fiber Acoustical Ceiling Tile

Standard (mineral fiber) ACT that has a minimum of 50% recycled content, minimum NRC or .60 and is sag resistant and anti-microbial is recommended. Products meeting these criteria exist at all price points.

Potential manufacturers may include:
Armstrong, USG, Celotex

Remaining Spaces

BEST – Premium Acoustical Ceiling Tile w/ Rapidly Renewable Content:

Ceiling tile with rapidly renewable content that has a min. NRC of .80, min. LR of .75, is sag resistant, impact resistant, and anti-microbial is recommended. Cradle2Cradle products are available.

Potential manufacturers may include:
Armstrong

BETTER – Mineral Fiber Acoustical Ceiling Tile

Standard (mineral fiber) ACT that has a minimum of 50% recycled content, minimum NRC or .60 and is sag resistant and anti-microbial is recommended. Products meeting these criteria exist at all price points.

Potential manufacturers may include:
Armstrong, USG, Celotex

GOOD – Drywall:

Painted drywall is fairly easy to maintain however may inhibit access to mechanical systems in plenum space.



WALLS

There are several key components that can improve walls in recreation spaces and contribute to the overall sustainability of the facility.

- Acoustics - As recreation spaces are typically a series of hard surfaces, noise reduction can enhance in the most severe of these spaces through utilizing acoustic wall panels. Wall panels can range in color and configuration, be tackable or impact resistant and have NRC ratings ranging up to 1.10+. The gym, lobby and dance room may be areas that would benefit from this treatment.
- Light Reflectance - Just as with ceilings Light Reflectance of the walls can help with levels of illuminance in the space and enhance natural lighting.
- Antimicrobial - in an environment that has a constant stream of people day in and day out it is prudent to incorporate antimicrobial properties in the products used on walls to assist in inhibiting microbial growth.
- Durability - The Adams Park Recreation Center is primarily a concrete block structure providing one of the most durable wall surfaces for a recreation facility. Any wall panels added for aesthetics or acoustics within a person's reach should strive to achieve the same or similar level of durability.

Corridors/ Lobby

As potential signature spaces of the facility, there may be additional aesthetic improvements in these areas. The BEST scenario illustrates this option.

BEST – High Performance Coating w/ Decorative Wall Panels

High performance coatings are defined by the number of Scrubs they can withstand before failing. The coating should be water-based, low VOC, anti-microbial and exceed 3000 scrubs. Decorative wall panels may range from tackable acoustic surfaces to mineral composite panels to premoulded or painted mdf or resin panels.

Potential manufacturers may include:

High Performance Coating: Scuffmaster, MDC

Tackable Acoustic Panels: Accutrack

Mineral Composite Panels: Modular Arts

Pre-Moulded MDF: Interlam, B&N Industries

Resin Panels: Trespa

BETTER – High Performance Coating w/ Decorative Wall Panels

High performance coatings are defined by the number of Scrubs they can withstand



before failing. The coating should be water-based, low VOC, anti-microbial and exceed 3000 scrubs.

Potential manufacturers may include:

Scuffmaster, MDC

GOOD – Low VOC Paint:

Low VOC paints have improved in their durability making them a viable option for a high use environment. Paint should meet LEED /GreenSeal Standards for all types.

Potential manufacturers may include:

Benjamin Moore, Duron, IPC, PPG, Sherwin Williams

Gym/ Kitchen

BEST – High Performance Coating

High performance coatings are defined by the number of Scrubs they can withstand before failing. The coating should be water-based, low VOC, anti-microbial and exceed 3000 scrubs.

Potential manufacturers may include:

Scuffmaster, MDC

BETTER – Low VOC Epoxy Paint:

Low VOC epoxy paints continue to improve in their durability making them a viable option for a high use environment. Paint should be water-based and meet LEED / GreenSeal Standards for all types.

Potential manufacturers may include:

Benjamin Moore, Duron, IPC, PPG, Sherwin Williams

BETTER – Low VOC Paint:

Low VOC paints have improved in their durability making them a viable option for a high use environment. Paint should meet LEED /GreenSeal Standards for all types.

Potential manufacturers may include:

Benjamin Moore, Duron, IPC, PPG, Sherwin Williams

Restrooms/ Locker Rooms

BEST – High Performance Coating

High performance coatings are defined by the number of Scrubs they can withstand before failing. The coating should be water-based, low VOC, anti-microbial and exceed 3000 scrubs.



Potential manufacturers may include:

Scuffmaster, MDC

BETTER – Ceramic or Porcelain Tile

A standard for many years, in combination with an epoxy grout, tile can provide a durable flooring that will last years.

GOOD –Low VOC Epoxy Paint:

Low VOC epoxy paints continue to improve in their durability making them a viable option for a high use environment. Paint should be water-based and meet LEED / GreenSeal Standards for all types.

Potential manufacturers may include:

Benjamin Moore, Duron, IPC, PPG, Sherwin Williams

Remaining Spaces

BEST – High Performance Coating

High performance coatings are defined by the number of Scrubs they can withstand before failing. The coating should be water-based, low VOC, anti-microbial and exceed 3000 scrubs.

Potential manufacturers may include:

Scuffmaster, MDC

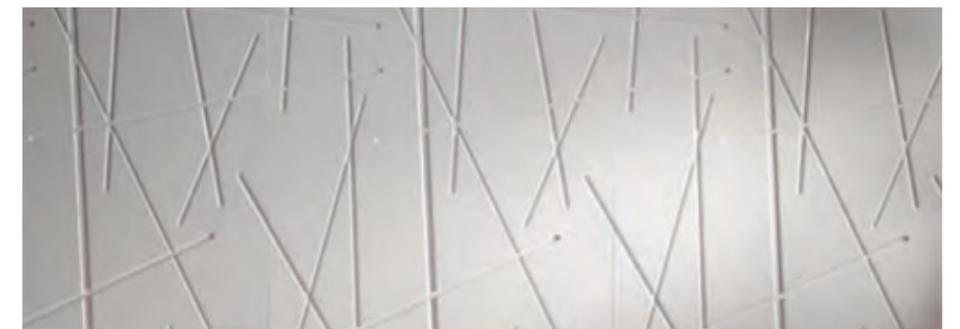
BETTER – Low VOC Paint:

Low VOC paints have improved in their durability making them a viable option for a high use environment. Paint should meet LEED /GreenSeal Standards for all types.

Potential manufacturers may include:

Benjamin Moore, Duron, IPC, PPG, Sherwin Williams

GOOD – No Recommendation



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Chapter 7: Systems Recommendations

OFFICE / CLASSROOM AREA

I. **GEOHERMAL SYSTEM - with HEAT RECOVERY VENTILATOR \$\$\$\$**

Geothermal heat pump or ground source heat pump (GSHP) is a central heating and/or cooling system that pumps water to or from the ground. It uses the earth as a heat source (in the winter) or a heat sink (in the summer). This design takes advantage of the moderate temperatures in the ground to boost efficiency and reduce the operational costs of heating and cooling systems. This design may be combined with solar heating to form a geo-solar system with even greater efficiency.

Advantages:

- Environmentally friendly
- They use 25%–75% less electricity than conventional heating or cooling systems
- Geothermal heat pumps can reduce energy consumption—and corresponding emissions—up to 44% compared to air-source heat pumps and up to 72% compared to electric resistance heating with standard air-conditioning equipment.
- Improve humidity control by maintaining about 50% relative indoor humidity
- Quiet operation
- Low maintenance
- Installation in new and retrofit situations
- Underground piping warranties of 25 to 50 years
- Heat pump life of 20 years
- No outside compressors (no copper theft)
- Excellent zone space conditioning
- Heating and cooling
- Simple control
- Commercially available in many sizes

Disadvantages:

- High up front cost
- Drilling required for underground piping
- Pipes may be difficult to repair if damaged

II. **VARIABLE REFRIGERANT VOLUME (VRV)/VARIABLE REFRIGERANT FLOW (VRF) SYSTEM with HEAT RECOVERY – with HEAT RECOVERY VENTILATOR \$\$\$**

VRV or VRF is a commercially applied heating and cooling system that distributes refrigerant, rather than water, to multiple ducted or un-ducted indoor units serving the conditioned space.

Advantages:

- Energy efficient utilizing variable speed compressors
- 10 to 20 percent energy savings compared to conventional systems
- Individual control of multiple zones on one piping network
- Centralized piping network
- Heating and cooling simultaneously
- Tight temperature control, quiet indoor operation
- Control using multiple protocols
- High EER and COP values

- Lower maintenance cost
- Possible tax credit

Disadvantages:

- Installation cost may be higher when compared to a conventional system

III. **SPLIT SYSTEM HEAT PUMP with Supplemental Heat - with HEAT RECOVERY VENTILATOR \$\$**

The split air conditioning means that the condenser or “outdoor unit” is separated from the “indoor unit”. Some models come with multiple indoor units that will use one single compressor; this is known as the multisplit air conditioning system. The heat pump may require additional electric heat to meet heating demand. For those systems where individual or simultaneous heating and cooling is required, separate split systems should be considered.

Advantages:

- Heat pump produces 3kW of heat to 1 kW of electricity spent (an electric heater gives you a 1 to 1 ratio)
- Easy installation
- Easy maintenance
- Quiet operation
- Heating
- Cost effective
- Simple control
- Commercially available in many sizes

Disadvantages:

- Multiple units required (interior and exterior)

GYMNASIUM

The gymnasium in this facility has been recently updated with self-contained air conditioning units and new ductwork.

Recommendations for other facilities are:

I. FABRIC DUCTWORK

An Air sock is a textile or fabric duct used for air distribution and delivery of conditioned air as an alternative to traditional spiral or rectangular steel ducts with grilles and diffusers. Fabric ducts are usually cheaper in material cost, and are quicker to install than conventional metal systems.

Advantages:

- Light Weight
- No Condensation
- Indoor Air Quality
- Silent air delivery
- Low labor/installation cost
- Simple maintenance
- Wide range of colors

Disadvantages:

- Foreign object could puncture ductwork

ALL AREAS

I. ENERGY RECOVERY VENTILATOR

Energy recovery ventilation systems provide a controlled way of ventilating a facility while minimizing energy loss. They reduce the costs of heating ventilated air in the winter by transferring heat from the warm inside air being exhausted to the fresh (but cold) supply air. In the summer, the inside air cools the warmer supply air to reduce ventilation cooling costs

Advantages:

- Save energy by utilizing recovered energy from the exhaust air stream
- Recover about 70%–80% of the energy in the exhaust air

Disadvantages:

- Installation cost higher
- Additional device required to prevent frost formation
- More maintenance required (cleaned regularly)

PLUMBING SYSTEM

I. LOW FLOW or ULTRA LOW FLOW URINALS with SOLAR POWERED BATTERY OPERATED SENSOR

Low Flow (ultra low flow), 1/8 gallon per flush models with a battery powered flush sensor is the unit recommend for all new construction and retrofits. These low flow units provide 85% of the water savings associated with waterless units without the cartridge changing costs.

Advantages:

- Low flow equals water savings
- Qualify for USGBC LEED point
- Low maintenance
- Installation in new and retrofit situations
- First cost is coming down

Disadvantages:

- High up front cost in \$ per unit

II. WATERLESS URINALS

The waterless urinal with wall outlet saves you water and money. The unit eliminates water and sewer costs from urinals; reduces maintenance and repair bills; and is designed to create hygienic, odor-free restrooms. Implementation and maintenance guidelines must be understood prior to specifying this product.

Advantages:

- Reduced water and sewer cost
- Qualify for USGBC LEED point
- Installation in new and retrofit situations
- Payback around 1 ½ to 3 years
- Does not require freeze protection
- Does not require flush valve maintenance
- Does not require batteries, transformers or electronics
- Environmentally friendly

Disadvantages:

- Educating janitorial staff on what products to use for cleaning
- Odor or perceived odor related to decreased cleanliness
- Splashing of urine on men's trousers during use (may not apply here)
- Reduced flow in waste water piping leading to deterioration of piping
- Cartridge changing costs
- Material expenses and stocking
- Labor expenses and when to replace
- Who does the change out? FMS or janitorial?
- Cartridge disposal. HazMat or not?

III. LOW FLOW WATER CLOSET with SOLAR POWERED BATTERY OPERATED SENSOR

A pre 1994 flush-toilet or gravity-fed toilet uses 3.4 US gallons or 2.8 imperial gallons or more per flush. In 1992, the United States Congress passed the Energy Policy Act of 1992, which mandated that, from 1994, the common flush-toilet use only 1.6 US gallons of water per flush. Low flow water closets possess an effective flush volume of 1.28 US

gallons or less. Low flow water closets may be single-flush or dual-flush. A dual-flush toilet permits its user to choose between two amounts of water. Some Low flow water closets are pressure-assisted (or power-assisted or pump-assisted or vacuum-assisted).

The performance of a flush-toilet may be rated by a Maximum Performance (MaP) score. The low end of MaP scores is 250. The high end of MaP scores is 1000. A toilet with a MaP score of 1000 should provide trouble-free service. It should remove all waste with a single flush; it should not plug; it should not harbor any odor; it should be easy to keep clean. The United States Environmental Protection Agency uses a MaP score of 350 as the minimum performance threshold for Low flow water closets.

Advantages:

- Reduced water and sewer cost
- Qualify for USGBC LEED point
- Installation in new and retrofit situations
- Payback around 1 ½ to 3 years
- Environmentally friendly

Disadvantages:

- Specifying the right manufacturer

IV. Faucet's with LOW FLOW AERATOR and SOLAR POWERED BATTERY OPERATED SENSOR

The installation of faucets with solar powered battery operated sensors and low flow aerators' (0.5 gpm), will save the owner money and water usage.

Advantages:

- Reduced water and sewer cost
- Qualify for USGBC LEED point
- Installation in new and retrofit situations
- Environmentally friendly

Disadvantages:

- Educating janitorial staff on who replaces batteries

V. LOW FLOW SHOWER HEADS

According to the Environmental Protection Agency, water use during showering or bathing represents 17 percent of all indoor household water use. Water flow and water pressure measurements determine the flow rate of a showerhead. Low flow showerheads (less than 2.5 gpm and 80 psi) restrict the flow of water and reduce the amount of water used during a shower. Low flow showerheads benefit the environment while lowering the owner's utility bills.

Advantages:

- Reduced water and sewer cost
- Qualify for USGBC LEED point
- Installation in new and retrofit situations
- Environmentally friendly
- Easy to install
- Inexpensive

Disadvantages:

- None

VI. SOLAR POWERED WATER HEATER

Solar water heating systems include storage tanks and solar collectors. There are two types of solar water heating systems: active, which have circulating pumps and controls, and passive, which don't.

Most solar water heaters require a well-insulated storage tank. Solar storage tanks have an additional outlet and inlet connected to and from the collector. In two-tank systems, the solar water heater preheats water before it enters the conventional water heater. In one-tank systems, the back-up heater is combined with the solar storage in one tank.

Advantages:

- Reduced energy usage
- Qualify for USGBC LEED point
- Installation in new and retrofit situations
- Environmentally friendly
- Easy to install by experienced installer

Disadvantages:

- New technology for the user - requires training

VII. RAINWATER HAEVESTING COLLECTION SYSTEM

Rainwater harvesting is the accumulating and storing, of rainwater. Rainwater harvesting systems channel rainwater that falls on to a roof into storage via a system of gutters and pipes. The collected rainwater can be reused to irrigate vegetation or to water the local golf course. Additional uses of the collected water could be to flush toilets. Local codes must be understood in order to follow rainwater requirements.

Advantages:

- Reduced water usage
- Qualify for USGBC LEED point
- Installation in new and retrofit situations
- Environmentally friendly

Disadvantages:

- May lead to less water returned to the lake
- Underground tank may be required
- Energy used to pump water to final destination

CONTROLS SYSTEM

I. INTRODUCTION

Building Controls is always the most misunderstood and mistreated application of those included into the Building Systems discipline which typically includes Mechanical-HVAC, Electricity, Plumbing, & Communications. This industry is geared to provide an "all inclusive" stream of technologies and information for which the potential Owner/User tends to acquire a certain level of automated advantages that includes a myriad of little conveniences.

In short the Adams Park Community Center needs a "smart" controls system configured to be "User Friendly" in terms of the non-technical staff that administers or run the place.

II. OPERATION

This system should offer a web-interface, dedicated interface screen or dedicated button-switch panel that allows Administrative Users to set areas of the building as Occupied, Unoccupied, or Off via schedules or time-based overrides to allow usage for random events.

Upon setting systems to Occupied Mode the Controls system shall be "smart" enough to index to On and Occupied those mechanical systems (such as air handling unit(s) and exhaust fan(s) associated with the area to be used.

This system shall be a User adjustable "time of use" setting. Once indexed to Occupied Mode all associated systems shall run continuously until the typical time of use duration is completed. At this point several space motion detectors shall confirm that no occupant is present in the space prior to setting the systems back to either Unoccupied Mode or simply Off. This pre-configuration will ease the system utilization on behalf of the typical Users who usually are not aquatinted with the technical details to operate it. All systems (existing and new) should be configured to operate as described in order to deliver a functional system to the Administrator.

III. COMFORT

This system should include a built-in "Pre-Occupancy Mode" function that will use internal algorithms to determine the best earliest time to index pre-selected systems to On or Occupied Mode so the space(s) are at setpoint at the beginning of the scheduled occupancy. Also the local screen shall include a pop-up window to flash whenever the systems are indexed to Occupied manually to advise the User(s) that it will take some time to achieve the desired setpoint(s). Said screen shall flash intermittently until said setpoint(s) are achieved. This feature will avoid the usual service calls generated due to this scenario.

IV. MONITORING

Local monitoring for both local and remote Users shall be limited to a color coded command, status and alarm pictorials where a building floor plan depiction is shown on a screen indication a color for commands (occupied, unoccupied, on, or off), status (run, on or off), and alarms (text based or equipment codes). This approach will allow an effective communication of the system status to both local and remote users. Typically, remote users will be the central monitoring office such as the engineering center of the agency. Technically driven screens shall be available for maintenance personnel use only.

V. EFFICIENCY

The Controls system shall be configured to aggressively apply legacy energy conservation methods such as setting back all systems to Unoccupied Mode (setpoint setbacks are applied) or Off to conserve energy. Other methods include the tie-in of electrical panels to override most of the lights to Off when not in use. In turn the lighting systems should have a motion sensor built-in the room light switch to turn Off room lights when Unoccupied for more than 10 minutes (adjustable). The HVAC system shall incorporate a single t-stat per room to increase the system controllability while ensuring expected comfort.

VI. GREEN ENERGY

The Controls system shall be incorporate site sub-metering for gas, water, and power. These values can be read & logged remotely in order for the Administrative rep. to verify that actual billings are accurate. If any form of Renewable Energy source is added such as solar panels then the User screen interface can dynamically show how much energy is saved from the grid or better yet sold back to the grid thus making the site a truly sustainable place. Finally the HVAC system shall potentially incorporate a passive exhaust to supply air heat exchanger to reduce energy consumption. Temperature sensors can be added to both upstream and downstream side of each air stream in order to show actual energy savings and overall efficiency on the User interface screen.

VII. MAINTENANCE

The can include a set of "smart" alarms that can notify Users, Maintenance and Administrative staff of any issues via e-mail alerts, system alarm screen pop-ups, automated voice dials, text paging, etc. These alarms can be arranged from the HVAC failures to continuous water or gas usage while all systems are turned Off such as normally happens during a holiday period.

ADDITIONAL SYSTEM

I. SUNPOWER SYSTEMS

Solar power lowers your energy costs by channeling the sun's energy. It hedges against rising utility rates, increasing your energy savings over time, and requires little maintenance. (<http://us.sunpowercorp.com>) 1-800-786-7693

Sun Power Systems provide a turnkey product for the Owner. The final installation incorporates a flat screen monitor located per the owner request. The monitor offers real time solar energy collection data at the facilities site. Community center users can get a first hand look at this impressive energy conservation feature. Children will learn more about energy conservation as they use the interactive monitor to view other energy conservation links. Free site assessment by SunPower Personnel.

Advantages:

- Reduced energy usage
- Qualify for USGBC LEED point
- Installation in new and retrofit situations
- Environmentally friendly
- Interactive monitor for community to learn more about solar power

Disadvantages:

- May not produce substantial amount of energy
- Space required on roof for solar panels

LIGHTING RECOMMENDATIONS

INTERIOR LIGHTING

I. RECREATION CENTER

The existing building has 2'-0" x 4'-0" lighting fixtures that use T12 lamps. These lamps have been phased out of production at the end of 2010 due to more efficient (T8) lamps replacing them. Recommend replacing the T12 fixtures with fixtures that utilize these T8 lamps. Recommend providing energy-efficient 28 watt T8 lamps for the fixtures. There are 32 watt T8 lamps and 25 watt T8 lamps available on the market; however the 28 watt T8 lamps have the highest luminous efficacy (efficiency of light output to power used).

II. EXIT SIGNS

The existing building has incandescent exit signs throughout. These exit signs typically use 15 to 25 watts of power each. Recommend replacing these with energy-saving LED exit signs which use 5 watts per exit sign face.

III. EMERGENCY FIXTURES

The existing building has many wall-mounted emergency fixtures. Recommend removing these and providing emergency batteries in the lighting fixtures instead. This would remove targets for vandalism as well as provide an improved aesthetic for the building. The cost of installation of an emergency battery and an emergency fixture are approximately equivalent.

IV. GYMNASIUM

The existing lighting in the gym appears to be good working condition. Recommend re-using the existing lighting and controls. The exit signs and wall-mounted emergency fixtures in the gym, however, appear to be beaten up and should be replaced. When replacing, recommend installing cages around the new fixtures to protect them from basketballs.

V. NEW CONFERENCE ROOM

The new conference room will have glazing that will utilize daylight to illuminate the space. Because daylight is not a consistent source, the conference room lighting fixture layout should be designed for the worst case scenarios and everything in-between. Full-service lighting should be provided for when no daylight is available and shades should be provided for when there is enough daylight to cause glare. A level of control should be provided for the lighting fixtures to balance out the inconsistent illumination of the sun. Daylight sensors and full dimming are a sustainable solution for this purpose but are not recommended due to their very high up-front cost. Instead, recommend providing bi-level switching to control the lighting fixtures within the space.

INTERIOR LIGHTING CONTROLS

I. OCCUPANCY SENSORS

- Recommend utilizing occupancy sensors for energy-savings where possible, including:
- o Switch-type passive infrared sensors in small rooms (15'-0" x 20'-0" or smaller) including offices, small storage, and conference room.
 - o Ceiling-mounted ultrasonic type in bathrooms.
 - o Ceiling-mounted passive infrared elsewhere including multi-purpose rooms, kitchens, and hallways.

II. BI-LEVEL SWITCHING

Recommend using bi-level switching in offices and conference room for energy savings (not all of the lamps are on when the space is occupied) and ocular comfort of occupants.

EXTERIOR LIGHTING

I. EXTERIOR SOFFITS, PHOTOCCELL AND TIMERS

The existing recessed lighting in the exterior soffits uses incandescent lamps. Recommend replacing this lighting with LED lighting. There is a higher up-front cost for LED over other sources; however this cost will be offset by the energy savings of LED as well as cost of maintenance. LED lamps have the longest life of available sources. The cost to maintain and replace lamps in the high-up, difficult-to-reach soffits make LED's a great option for this application. Recommend controlling this lighting by photocell-on and timer-off.

II. POLE LIGHTING

The existing pole lighting in the parking lot and by the entrances runs during the day, wasting energy and costing the owner money. Recommend replacing this lighting with pole fixtures utilizing metal halide type lamps with electronic ballasts. Recommend controlling this lighting by photocell-on and timer-off. Do not recommend using LED lighting for this application at this time. LED lighting for wide flood applications is slightly more efficient than metal halide sources, but not enough to offset the much higher up front cost.

III. MOTION SENSORS

Recommend using flood lighting controlled by motion sensor for security purposes.

Chapter 8: Sustainability Recommendations

Sustainable Solution

Sustainable recommendations for space planning, interior elements, systems integration, and LEED certification were generated for the Recreation Center as well. The building and site was evaluated to maximize economic gains and minimize energy consumption, both during and after construction. Reduced demolition, maintaining existing stones and dirt by equalizing cut and fill, and recommendations for recommended systems such as mechanical, electrical and plumbing, solar heating, and lighting solutions are included herein with advantages and disadvantages called out. Any data, products or systems referred to in this document are only to relay to the reader the type of system discussed. It is not a recommendation of the specific system or specific manufacturer. The reader must research and verify systems, cost, energy usage and savings on an individual basis.

The suggested architectural and landscape designs that have been presented for this project have already incorporated many sustainable features. The purpose of this narrative is to further announce the various sustainable strategies that should be considered in the proposed renovation of the buildings.

Please refer to the LEED® Checklist that accompanies this narrative that lists the various prerequisites and credits that we feel will be able to be incorporated into the project's design and construction at minimal additional costs. This checklist also includes some of these approximate additional costs for specific credits that might not be included in a typical park building renovation of this type. These, of course, are budgets at this stage of design, but are intended to give a fair representation of premium costs that might be associated with a competitively bid construction contract in a design-bid-build scenario. They also include approximations for additional design, commissioning and LEED registration and certification fees. One aspect that should be mentioned, however, is that a LEED project (and any green building) lends itself to an integrated design-build approach. One advantage of this approach is that preliminary estimates can be done in early design stages resulting in options proposed for achieving similar results at less or no premium costs. It might also result in higher certification levels and corresponding life cycle savings within the established budget.

Our recommendations will follow the LEED organization of site, water efficiency, energy and atmosphere, materials and resources and indoor environmental quality.

To start, we have considered that this project would be most applicable to the LEED rating system for New Construction (NC) under Building Design + Construction as it will incorporate a new addition as well as major renovations to a large portion of the existing building.



SUSTAINABLE SITES

There are certain inherent sustainable advantages to the existing site which should be mentioned:

It is obviously a park with ample green space. The existing pond provides storm water detention and water quality improvement from run off. By renovating the existing building, we are keeping existing building stock and not taking up more green space. It is also within reach of public transportation and is readily accessible from adjacent neighborhoods.

Our recommendations to further these advantages are:

- Provide bicycle racks for better non-vehicular access as well as preferred parking for low emitting vehicles and car and van pools.

- Ensure that construction activities do not damage existing green space and restore native vegetation in the surrounding areas without the need for irrigation, or use non-potable water for irrigation. While rain water harvesting should be considered, a building collection system was not included in our preliminary assessment as being too costly, and the existing pond is, in effect, a rain water collection system. It is currently being used to irrigate the golf course, and an additional pump (possibly solar powered) could be installed to irrigate any necessary areas on this site. It is recommended, however, that a study be done on the existing drainage from the building and surrounding site and ensure that it is being routed to the pond as much as possible. Many of the existing downspouts from the building have been disconnected from the underground storm drainage and are currently draining directly to the foundations, which will only cause problems if left in this condition.

- The plan calls for a new entrance drive and drop off at the east entrance, as well as a new patio area at the west entrance. Any exterior hardscape should be done in reflective materials to minimize heat island effect. Standard concrete meets this criterion and is a relatively low cost yet durable option.

- As we understand it, the roof replacement may be done as a separate project, but will still need to incorporate sustainable strategies. The flat roof sections should be replaced with a highly reflective membrane, such as a white TPO. We recommend the pitched sections be replaced with a reflective standing seam metal roof. While we heard there might be some objections to this type of roofing, it is not possible to obtain the reflective and energy savings properties with an asphalt shingle roof, as is existing. The metal roofing will have a high recycled content and will usually last much longer than the shingle roof. Adding a substantial amount of insulation value to the roof should be a priority. This could be done by adding rigid insulation on top of the existing sheathing, or, it could be achieved by spraying foam-type insulation to the underside of the sheathing and framing. Further investigation will be needed to determine the most effective approach.

- Additionally, exterior lighting and lighting that escapes from the building should be designed to minimize light pollution to the surrounding areas, while maintaining proper safety and security.



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Yes	Likely	Maybe	Unlikely	No		26 Points	Cost Impact	Comments
2	16	2	5	1	Sustainable Sites			<i>List specific strategies, comments, assumptions, etc.</i>
					Prereq 1 Construction Activity Pollution Prevention	Required		Will be included by code
1					Credit 1 Site Selection	1		Should qualify for this
			5		Credit 2 Development Density & Community Connectivity	5		Probably not enough density or community services within 1/2 mile.
				1	Credit 3 Brownfield Redevelopment	1		N/A
	6				Credit 4.1 Alternative Transportation, Public Transportation Access	6		It looks like we will just squeak by to get 2 bus stops in 1/2 mile
1					Credit 4.2 Alternative Transportation, Bicycle Storage & Changing Rooms	1	\$1,648	Should be able to incorporate bicycle racks. Showers already in project.
	3				Credit 4.3 Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles	3	\$975	Should be able to provide preferred parking, but need to determine how many are needed.
	2				Credit 4.4 Alternative Transportation, Parking Capacity	2	\$975	Should be able to do provide car pool parking, or, Option 3 - no new parking.
	1				Credit 5.1 Site Development, Protect or Restore Habitat	1		Depends on how we draw the boundary. Also LAs need to specify native or adaptive plants, but this should be possible.
	1				Credit 5.2 Site Development, Maximize Open Space	1		Would think this is possible
	1				Credit 6.1 Stormwater Design, Quantity Control	1		Need to check site boundary and storm system, but possible with existing pond.
		1			Credit 6.2 Stormwater Design, Quality Control	1		Need to see if the existing pond will get this
	1				Credit 7.1 Heat Island Effect, Non-Roof	1		Should get this with concrete sidewalks/paving and green space.
	1				Credit 7.2 Heat Island Effect, Roof	1		Should get this with a sloped metal roof and white TPO on flat
		1			Credit 8 Light Pollution Reduction	1		Need to ensure that building and site lighting will meet this criteria.
						Subtotal	\$3,599	



WATER EFFICIENCY

Saving on the use of potable water in our buildings should be standard design protocol in our area, and the good thing is, it is much easier to do than in previous years. There are many water saving plumbing fixtures now available that should not add any premium costs to the project. Depending on the owner's maintenance program, there are even waterless fixtures that can be considered.

Our recommendations in this area are:

- As mentioned above, consider restoring the surrounding vegetated areas to native plants that do not require irrigation. If needed, look at using the pond for a non-potable water source.
- Use low flow plumbing fixtures and faucets throughout. Sinks, lavatories and shower heads should all be low flow. Consider automatic valves at lavatories and flush fixtures. 1 pint urinals and 1.25 gal toilets should be available. Purchase only water-saving appliances (e.g. dishwashers).
- A major approach to saving on the use of potable water and sewage conveyance in buildings can be the installation of a grey water system to flush toilets and urinals. While this can be considered, we did not include this in our recommendations because the initial cost can be prohibitive, and also because this may require more maintenance than the existing staff can accommodate.



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Yes + +/- - No

					Water Efficiency	10 Points	Cost Impact	Comments
2	2	4	2					
Y					Prereq 1 Water Use Reduction 20%	Required		Need to include low flow fixtures - should be no additional costs
	2	2			Credit 1 Water Efficient Landscaping , Reduce by 50% or 100%	2 to 4	\$2,167	Can use drip irrigation, or use all landscaping that needs no irrigation. Drip has some cost premium to it. Other strategies for this include rainwater collection, which will add more costs
			2		Credit 2 Innovative Wastewater Technologies	2		Don't believe the cost benefit makes this feasible at this time.
2		2			Credit 3 Water Use Reduction , 30%, 35% & 40% Reduction	2 to 4		Might be able to get 30% with low flow fixtures at no cost. Would consider waterless urinals?
						Subtotal	\$2,167	



ENERGY & ATMOSPHERE

While this category can add the most cost to a project, it can also provide the most savings over time. Any strategy considered should also include an analysis of the “pay-back period”, or how long it would take to recoup any premium installation costs in savings over time.

- The first prerequisite for this category will probably add some cost to a project of this type. Basic commissioning must be done regardless. We also recommend the enhanced commissioning be done as well. There are generally many benefits to the added expense, including systems that perform to their design capabilities and a follow up survey to ensure it continues.

- Optimizing energy performance entails not only looking at the HVAC systems, but also the lighting systems and the building envelope. Mentioned above is the roof replacement, which should include a much more efficient insulation value. The interior lighting should be designed to take advantage of natural day light wherever possible. For this building, the new addition is designed to provide day-lighting, but inexpensive skylights could also be added to the meeting areas and gym to provide lighting when conditions permit. These should be coupled with daylight sensors to dim or turn off building lighting when possible. Because of the public and sometimes sporadic use of many of the rooms, it is also recommended that occupancy sensors be installed to turn off lights when not in use. In any case, more efficient fluorescent bulbs should be installed for energy savings (T-8). Using LED lights will offer even further life cycle savings, though the initial cost is more expensive. The existing windows and storefronts should all be replaced with more energy efficient insulating glass with low-e coatings. There needs to be further research and design for the replacement of the older HVAC equipment before any concrete recommendations can be made, but higher efficiency units should be considered than just meeting current codes. An energy recovery system should also be considered from the toilet exhausts. At the gym, there is an existing ventilation/exhaust system that could be utilized when external temperature and humidity conditions were favorable. This could save on using the HVAC system at certain times of the year. At the same time, an Energy Management System should be installed that can provide more flexible operating environments in all areas to meet the usage needs of the building and save energy by doing so.

- While solar panels come with a high first cost, you essentially are getting free power after that. We did not include putting any Photo-Voltaic panels (panels that directly produce electricity from the sun’s light) because of the high initial cost, amount of space required and the relatively long pay-back period. We did, however, include a solar hot water system to provide domestic hot water for the bathrooms, showers and kitchen. We believe this will have a much shorter pay back period and be worth the initial cost.

- We did not include adding means to measure and verify energy consumption in the building, or for the owner to purchase green power, but these items should be investigated further as the program and design progresses. Incorporating this into the Energy Management System is recommended.



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New Construction (NC)

					Energy & Atmosphere	35 Points	Cost Impact	Comments	
Yes	+	+/-	-	No					
2	5	8	20						
Y					Prereq 1	Fundamental Commissioning of Building Energy Systems	Required	\$18,419	This is a prerequisite, and will add some cost to the project
Y					Prereq 2	Minimum Energy Performance	Required		Will need a 10% improvement over minimum standards. Ensure this is incorporated into the mechanical design.
Y					Prereq 3	Fundamental Refrigerant Management	Required		This is a code requirement and is included
2	2	2	15		Credit 1	Optimize Energy Performance	1 to 19	\$54,173	Per the above note, the design must incorporate additional efficiencies in the HVAC systems, coupled with the envelope to achieve points in this credit. New roofing should incorporate added insulation and glazing should incorporate energy efficient and Low-E glass.
1	1	5			Credit 2	On-Site Renewable Energy	1 to 7	\$13,923	Provide for Solar Hot Water system. Panels mounted on south side of gym roof.
2					Credit 3	Enhanced Commissioning	2	\$10,835	Commissioning is required the prerequisite, then this should be achievable at only a little more cost
2					Credit 4	Enhanced Refrigerant Management	2		This should be achievable with current available equipment
		3			Credit 5	Measurement & Verification	3		Will add some cost to the project, but should be looked at to determine benefits over time.
		2			Credit 6	Green Power	2		This is an owner's operating cost and not a construction cost, but can be considered.
							Subtotal	\$97,349	



MATERIALS & RESOURCES

This category includes many items that are instituted in the construction phase, as well as the design phase. Executing construction waste management and using local materials with high recycled content rely upon the contractor's procurement expertise as much as the designer's material selection. These strategies should be made a part of the Project Manual's specifications so that all bidders clearly understand what will be required of them. There should be no additional costs for incorporating these into the project, unless they are added after the bids.

Specifically:

- Providing for building recycling is a prerequisite and must be included. We feel this should be a part of all public buildings in any case.
- The renovation portion should qualify for reusing the building's structure and skin and possibly the interior partitions.
- Construction Waste Management consists of segregating all construction waste, either on or off site, and ensuring as much of this waste is sent to recycling as possible. Diverting 75% or more of this waste is not uncommon.
- Materials reuse has not been included in our initial review, but should be considered if the opportunity arises, such as reclaimed flooring or exterior stone.
- Using construction materials that contain high percentages of recycled material and/or are obtained within 500 miles is very obtainable these days and should be included in the project's specifications.
- Selecting rapidly renewable materials and certified wood can be more challenging and why we have not included these strategies in our review. They should, however, be considered further in the design process to see if they could be feasible.



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Yes + +/- - No

					Materials & Resources	14 Points	Cost Impact	Comments
					Prereq 1 Storage & Collection of Recyclables	Required		This will need to be part of the design, but should not add cost
	3				Credit 1.1 Building Reuse , Maintain Existing Walls, Floors & Roof	1 to 3		As major renovation is being included along with the new addition, this should meet the criteria.
		1			Credit 1.2 Building Reuse , Maintain Interior Non-Structural Elements	1		Need to do calculations on what stays and what goes, but this may be possible.
2					Credit 2 Construction Waste Management	1 to 2		This should be incorporated into the specifications.
			2		Credit 3 Materials Reuse	1 to 2		This is more difficult to comply with, unless there is a source for materials at the new addition
2					Credit 4 Recycled Content	1 to 2		This is should be achievable with careful selection by the design team and contractor
2					Credit 5 Regional Materials	1 to 2		This is should be achievable with careful selection by the design team and contractor
			1		Credit 6 Rapidly Renewable Materials	1		This is more dependent on material selection by the architect
			1		Credit 7 Certified Wood	1		This is more dependent on material selection by the architect, but will also add costs

continued...



INDOOR ENVIRONMENTAL QUALITY

As in materials and resources, there are a number of possible credits that rely upon the contractor's execution and should be clearly spelled out in the specifications. Again, these items should not necessarily mean additional costs, just careful planning and follow through. The design team should also be aware of all the prerequisites and ensure they are incorporated into the design. Since most of us spend at least 90% of our days inside buildings, this category can directly impact the quality of life we enjoy.

- Outdoor air monitoring involves installing CO2 sensors that measure the carbon dioxide concentrations in areas where groups congregate. These have not been included in our review, but should be looked at as a possibility for not much added costs. These will show an alarm if the concentrations reach elevated levels so additional fresh air can be introduced.

- Increased ventilation rates have not been included because of the initial cost and increased energy usage to condition more outside air into the building. This strategy should be reviewed further when the design engineers have been retained.

- Indoor air quality during construction should be standard construction practice, but again, should be spelled out in the documents to ensure it is included. Indoor air quality before occupancy can be done in 2 ways, and either is appropriate for this project. A flush out of the spaces before occupancy will depend on the schedule and the capacity of the HVAC systems. The testing option will involve some testing costs, but will not require a delay before occupancy. We recommend that both construction and occupancy strategies be attempted.

- Most standard construction materials are available these days with low VOCs and without much, if any, additional costs. Adhesives and sealants, paints and coatings and flooring systems are widely available and have been included in our recommendations. Using composite wood with no added urea formaldehyde may be a bit more difficult, mostly because of wood doors and casework that can add costs to the project. We have included this as a 'maybe' and this should be reviewed when more details are available.

- Indoor pollution control involves providing separate ventilation for the janitor's closet and also for appropriate entrance mats. These should be included in the design.

- The remaining strategies in this category have to do with the design of the lighting and HVAC systems. Providing for better occupant control of these systems allows for a more user-friendly and healthier environment. A follow up survey is recommended to ensure the occupants are comfortable with the end results. Incorporating sufficient lighting and thermal controls into the design now is much more cost efficient than trying to add them later. We recommend including these strategies into the design now where possible.

- Strategies for day lighting and views to the exterior have been mentioned above and should definitely be included. The existing portions of the building may benefit from larger window areas or the installation of inexpensive tube skylights, while the new addition should include this in the design. It will be more difficult to provide 90% of the existing spaces with direct views to the exterior, but should be studied further for possibilities.

LEED-NC		2009		Date:	21-Feb-11	For use with:	
LEED Version 2009 BD&C Project Analysis and Budget				New Construction (NC)			
ADAMS PARK RECREATION CENTER				ATLANTA GA			
Yes + +/- - No							
4	6	2	3	Indoor Environmental Quality	15 Points	Cost Impact	Comments
Y				Prereq 1 Minimum Indoor Air Quality Performance	Required		This is a code requirement
Y				Prereq 2 Environmental Tobacco Smoke (ETS) Control	Required		Will be Non-Smoking building. Need to ensure no smoking within 25' of entrances.
		1		Credit 1 Outdoor Air Delivery Monitoring	1		This will add some costs to the project, but probably not much.
			1	Credit 2 Increased Ventilation	1		This will add some costs to the project and will also decrease the efficiency of the HVAC system
1				Credit 3.1 Construction IAQ Management Plan, During Construction	1		This should be incorporated into the specifications.
	1			Credit 3.2 Construction IAQ Management Plan, Before Occupancy	1		This may add some costs to the project and depends on the option chosen
1				Credit 4.1 Low-Emitting Materials, Adhesives & Sealants	1		These should be achievable with current materials and current budget, depending on architect selection
1				Credit 4.2 Low-Emitting Materials, Paints & Coatings	1		Ditto
1				Credit 4.3 Low-Emitting Materials, Flooring Systems	1		Ditto
		1		Credit 4.4 Low-Emitting Materials, Composite Wood & Agrifiber Products	1		This is more difficult to obtain and may add cost depending on the amount of casework and doors, but should be pursued.
	1			Credit 5 Indoor Chemical & Pollutant Source Control	1		This should be in the current design
	1			Credit 6.1 Controllability of Systems, Lighting	1		This should be in the current design
			1	Credit 6.2 Controllability of Systems, Thermal Comfort	1		This may be expensive to achieve
	1			Credit 7.1 Thermal Comfort, Design	1		This should be in the current design
	1			Credit 7.2 Thermal Comfort, Verification	1		Will owner choose to perform a survey? Should be able to do so.
	1			Credit 8.1 Daylight & Views, Daylight 75% of Spaces	1		This may be in the current design. Need to model.
			1	Credit 8.2 Daylight & Views, Views for 90% of Spaces	1		Probably not in the design, but need to model.

continued...



INNOVATION IN DESIGN

This category allows for going above and beyond specified thresholds for things like recycled content and also for introducing innovative ideas that can enhance the sustainable footprint of the building. This is where the creativity of a team environment can be very beneficial and produce some good ideas and better results.

- As this is a community use building, it is advisable to incorporate an educational program of the sustainable aspects and strategies that have been used in the building. This does not have to be costly and can educate the community and make the users feel more involved in the building, while setting a good example for everyone.

- Can the maintenance staff utilize green cleaning materials in the building? These products are becoming more and more available at no added costs, and it only makes sense to protect the environmental standards that will be established for the new building.

- Exemplary performance should be possible in the recycled content category with careful attention to the program by all. There may be others, but this should be achievable.



2009

Date: 21-Feb-11

For use with:

LEED Version 2009 BD&C Project Analysis and Budget
ADAMS PARK RECREATION CENTER
 ATLANTA GA

New Construction (NC)

Yes + +/- - No

4					1		1		Innovation & Design Process		6 Points	Cost Impact	Comments
			1		Credit 1.1	Innovation in Design:				1			
1					Credit 1.2	Innovation in Design:				1			Do an educational program throughout the space, but will add some signage/AV costs to the project
1					Credit 1.3	Innovation in Design:				1			Would owner institute a green cleaning program?
1					Credit 1.4	Innovation in Design:				1			Recycled content at 30% should be achievable with careful material selection and tracking.
				1	Credit 1.5	Innovation in Design:				1			
1					Credit 2	LEED® Accredited Professional				1	\$33,046		Multiple LEED APs are on the project teams. This cost represents additional costs from the design team, as well as approximate costs for LEED Registration and Certification.
											Subtotal	\$33,046	



2009

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For use with:

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 ATLANTA GA

New Construction (NC)

Yes + +/- - No

2					1		1		Regional Priority		4 Points	Cost Impact	Comments
			2		Credit 1.1	Regional Priority				1			This will depend on credits achieved above.
					Credit 1.2	Regional Priority				1			
					Credit 1.3	Regional Priority				1			
					Credit 1.4	Regional Priority				1			

Sustainability Summary

In summary, sustainability is not just about points on a checklist, but about doing what makes sense to protect and sustain our planet while improving the quality of our lives and the lives of our children. We have used the LEED checklist as a guideline to discuss these points, but it is up to the owner, design and construction team to ensure that sustainable goals are incorporated into the program goals of the project from the very beginning. Then, to see them followed through to ensure the highest quality space and grounds are created for the benefit of the community and for the efficient and economical use of our resources.



2009

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New Construction (NC)

Yes	Likely	Maybe	Unlikely	No				
2	16	2	5	1	Sustainable Sites	26 Points	Cost Impact	Comments
2	2	4	2		Water Efficiency	10 Points	Cost Impact	Comments
2	5	8	20		Energy & Atmosphere	35 Points	Cost Impact	Comments
6	3	1	4		Materials & Resources	14 Points	Cost Impact	Comments
4	6	2	3		Indoor Environmental Quality	15 Points	Cost Impact	Comments
4		1	1		Innovation & Design Process	6 Points	Cost Impact	Comments
	2	1	1		Regional Priority	4 Points	Cost Impact	Comments
20	34	19	36	1	Project Totals (pre-certification estimates)	110 Points	Total	
73								\$136,160

Certified 40-49 points Silver 50-59 points Gold 60-79 points Platinum 80 points and above

Chapter 9: Conclusion

From the Co-Chairs

Eight organizations that are invested in sustainable design came together to generate these recommendations, to create this booklet, and to assist the City with their sustainable efforts. This group of professionals wanted to give back to Atlanta communities and to the City. These organizations, members of AIA Atlanta, ASHRAE, ASLA Georgia, ASPE, CSI, GSEA, IIDA Georgia, and USGBC Georgia, also wanted to make a difference.

Through this effort, we have come up with a comprehensive look at sustainable design using the case study of Adams Park. However, the recommendations noted herein are applicable to most City Recreation Centers, and to all of its parks. We hope to see a notable difference in the design efforts of the City of Atlanta moving forward, and we are happy to have taken part in this effort.

The collaboration of the Teams on this project was seamless. Twenty five or more professionals who, for the most part, did not know one another were able to generate this booklet through an on ground Charette/Pre-Charette process and online communications in few week's time, while they maintained their work hours.

It may not be perfect, but it is an illustration of how important giving back is today, how collaboration can make a difference, and how information technology can assist us in doing so. Below you will find some testimonials from the members of the teams about this effort. As you can see, we got a lot out of it, we hope you will too.

Liset Robinson & Richard Nelson
Co-Chairs - 2010 RAGS Volunteer Committee



Testimonials

"The American Society of Landscape Architects and YLa are both very thankful to have been included in this project. Sustainability and the approach to site design go hand-in-hand. Responsible use of impervious surfaces, thoughtful consideration of site drainage, and proper selection of materials go a long way towards achieving today's sustainability goals. We appreciate the opportunity to share our thoughts with the city and to collaborate with such a talented team."

- Charles Sears, RLA, ASLA|GA & YLa

"The International Interior Design Association and the American Institute of Architects are very proud to have worked on the Adams Park project with such esteemed colleagues. As far as we know this has been the first of its kind: a Charrette put on by 8 distinct organizations for the benefit of Adams Park users with a deliverable that could set the tone for sustainable park and recreation center renovations across Atlanta. The payback for us includes feeling good about the profession, about collaboration, and about the spirit of volunteerism."

- Liset Arza Robinson, IIDA, AIA, ASID, IDEC, LEED AP

"The end justifies the means in this case. This is the first time I have participated in a project of this kind. The experience has proven to be more satisfying than I could have imagined. Both myself and my team mates were very honored to have been a part of this community service project. The time and effort given by all of the organizations really showed the enthusiasm and spirit of volunteering and team work. Each organization showed their willingness and commitment to this sustainability project and to the community. On behalf of ASHRAE and the MEP community I would like to say "what a great job" to the entire team."

- Michael E. Dudley, PE, CEM, LEED AP, ASHRAE Atlanta Chapter President | 2010 - 2011

Charrette Participants

Liset Robinson, IIDA
Savannah College of Art & Design Charrette Co-Chair

Richard Nelson, AIA
CNNA Architects, Inc. Charrette Co-Chair

Landscape Architecture

Charles Sears, ASLA|GA, YLa
Reece, Hoopes & Fincher, Inc. Group Leader

Joni P. Young, ASLA|Ga
Young Squared Studios Group Leader

Mark Bullard, ASLA|GA, YLa
Innovative Outdoors

Kamara Williams, ASLA|Ga, YLa
TYLin, Inc.

Thomas Nichols, ASLA|GA, YLa
ERTH Products

Jared Dobbs, ASLA|GA, YLa
UGA BLA Program Student

Veronica Pimentel, ASLA|GA, YLa
UGA BLA Program Student

Ross Bongiovi, YLa
GT Masters in Building Construction Student

Louie Northern, YLa
AECOM

Erin Nichols, YLa
T+E Design

Architecture & Interiors

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Savannah College of Art & Design Group Leader

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AIA Associate Director

Ronnie Belizaire, IIDA
Regus

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Fiona Grandowski, IIDA
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M. Christopher Baldwin, AIA
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Pimsler Hoss Architects, Inc.

Susan Watts, IIDA Guest
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Eric Cobbs, AIA
Croft & Associates

Elyse Robinson, Student IIDA
MFA Savannah College of Art & Design

Sustainability

Leesa Carter, USGBC
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Reed Thomas, USGBC
RJ Griffin & Co. Group Leader

Michael E. Dudley, ASHRAE
Working Buildings, LLC Group Leader

Pedro Pacheco, ASHRAE
O'BRIEN & GERE

Lauren Wallace, USGBC
The Epsten Group

Ross Wallace, USGBC
The Epsten Group

Marianna Palmour, USGBC

Dan Boland, USGBC
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Book Edited by:
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2010 RAGS VOLUNTEER PROJECT
ADAMS PARK:
CONCEPTUAL SUSTAINABILITY STUDY