GREEN LIVING DEMONSTRATION CENTER

RFQ Addendum

Conceptual Plans

September 24, 2015

...Providing Solutions
The Ash Group, Inc.

St. Petersburg College
SPC

Scope Of Work

Design-Build Services will be required by qualified Design–Build (D-B) firms in the State of Florida to provide pre-design activities, design phase, construction phase and minimum one-year warranty for the following:

> **To provide complete Design-Build services to construct the Green Living Demonstration Center (GLDC), St. Petersburg College (SPC) Seminole Campus. D-B Construction services to be provided shall include, but not be limited to: building envelope and outdoor features; heating, ventilation and air-conditioning (HVAC); roofing; civil; environmental and site development; waterproofing; parking and landscaping; general construction; fixtures, furnishings and equipment; and related support service areas. The following sections further describes the minimum requirements of the project along with other factors.**

By submitting an RFQ Response, all interested D-B firms will also understand and agree to the following minimum project criteria:

- 100% Signed and Sealed Construction Documents shall be completed and submitted to SPC by February 18, 2016.
- Construction reach substantial completion by March 31, 2017 including, at a minimum, building, site, academic programming, and exhibits, complete and ready for occupancy.
- Final completion shall be obtained by June 30, 2017.
- Firm shall have bonding capacity based on project amount.
- The D-B Firm shall provide value added services to the project in the form of obtaining In-kind donations of materials and service, to expand the type and number of exhibits and technology provided.
- Each parking space removed will be required to be replaced on campus.
- The building will be designed and constructed with Leadership in Energy & Environmental Design (LEED) Gold V3 Certification in accordance with §255.2575 F.S.; If possible, SPC desires this building to achieve Living Building Challenge (LBC) certification;
- Building and Site will meet or exceed all requirements of the Florida Building Code, latest edition; and,
- Meet State Requirements for Educational Facilities 2014 as issued by Florida Department of Education Office of Educational Facilities.

Project Objectives

SPC's Green Living Demonstration Center will be a highly visible community and education center at the east central side of the campus along 113th Street, SPC Seminole Campus, as shown on the RFQ Addendum Conceptual Plan Set - Project Location.

The **goals** of the Green Living Demonstration Center are to: 1) demonstrate green building techniques, alternative energy initiatives and technologies and reduced energy consumption; and 2) promote urban sustainability and mitigation effects of climate change.

This will be accomplished by the following minimum **objectives**:

- Design, construct and maintain a Leadership in Energy & Environmental Design (LEED) certified demonstration facility.
- Introduce and expand educational and exploration opportunities for students, community members and businesses.

Purpose

The purpose of the Green Living Demonstration Center (GLDC) is to exhibit green building techniques, alternative energy initiatives and technologies that reduce energy consumption. St. Petersburg College (SPC) proposes to design, build and maintain an estimated 1,500 - 2,500 sq. ft. facility that is residential in portions of the outward appearance, but will serve as an energy efficient model for development and redevelopment technologies and observation. Programmatic activities will encourage LEED and Living Building practices and showcase living and green building initiatives and sustainable resource implementation. The selected Contractor (herein referred to as the D-B Firm) is encouraged to develop partnerships with local and regional builder associations and green builders, as well as students and community members.

The project promotes urban sustainability and supports Florida Statutes related to mitigation of the effects of climate change. The GLDC furthers the objectives of the U.S. Department of Energy's (DOE) Building Technology Program (http://www1.eere.energy.gov/buildings/) by demonstrating the commercial viability of technologies, techniques, and tools for making buildings more energy efficient, productive, and affordable. This project is made possible by a grant provided by the U.S. Department of Energy and SPC.

Budget

The Budget for this project is $675,750.00. The budget will include, but not be limited to: building and site work, landscaping and irrigation, parking space demolition and relocation, loose furniture, fixtures, furnishings and equipment (FFE), appliances, and all exhibits, inclusive to construct a complete project. This project is excluded from Davis-Bacon reporting and compliance. However, the DOE may require other federal reporting requirements.

Vendor Participation and In-Kind Donations

Due to the limited budget, the selected D-B firm will be required to acquire vendor participation via donations and provide in-kind participation to the project. These donations can be in the form of exhibits and demonstration technologies to achieve the LEED and possible LBC objectives. In exchange for these donations, the college will recognize participants at a level that is commensurate with their support.

Schedule, Milestones and Deliverables

Schedule

The following are mandatory deadlines as set by requirements of the DOE Grant.

- 100% Certified construction documents shall be completed and submitted to the DOE by February 28, 2016.
- Substantial completion of construction shall be completed by March 31, 2017 including at a minimum building, site, academic programming, and exhibits, complete and ready for occupancy.
- Final completion shall be obtained by June 30, 2017, excluding LBC certification, if applicable.

Milestones

The following are some of the milestones that are scheduled within the aforementioned Design and Construction phase timeframes. Some of the milestones listed are set as part of the DOE grant reporting. D-B firm will assist SPC in gathering information and deliverables at each milestone.

- Conceptual Plan, 75% Construction Documents and Final 100% Construction Documents
- Notice to Proceed with Construction
- Construction Ground Breaking
- Foundation Completion
- Building Shell completion
- GLDC Substantial Completion
- GLDC Building Completion
- All exhibits and renewable energy, energy efficiency, and conservation techniques and technologies are commissioned and functioning.
- LEED Certification is obtained
- Submission of Living Building Challenge certification documentation, if applicable
- Assist in developing Technology Exhibit and Learning Plans
- GLDC in full operation, in full utilization by SPC staff, students and general public.
- Warranty Period walk through
- Project Close-out
- Anticipated date for obtaining Living Building Challenge Certification

Deliverables

Deliverables will be required at each milestone to include, but not limited to:

- Construction documents, Including plans, specifications and cost estimates/projections
- Construction progress photos
- Construction Schedules
- In-kind Donation (Material and/or Services) documentation by letter or receipt
- Monthly construction status reports

Project Minimum and Suggested Requirements

The Building shall be designed to obtain LEED Gold V3 Certification, and strive for Living Building Challenge (LBC) Certification following the LBC materials, petals and principles. The following is

a presentation of the minimum requirements for the project and suggestions for other desired technologies. It also provides some guidelines for building and site attributes requested by SPC staff and educators. A conceptual design is provided in the RFQ Addendum Conceptual Plan Set to illustrate how the requirements listed herein may be presented.

Building and Site Requirements

The building should incorporate the following features:

- Select exterior residential features, such as the entrance giving the building a residential feel
- Indoor and outdoor exhibit space with decks and screened porches
- Flexible Interior open space to accommodate up to 25 people (but not be shown as a classroom).
- Large outdoor exhibit space joined to the indoor space. Some of the outdoor space should be screened.
- Minimize walls, and provide movable or temp walls for exhibits.
- Clear or exposed permanent wall segments to exhibit sustainable and green building materials.
- Building controls, exhibit displays, and instrumentation should integrate cutting edge technology for operations and teaching.
- Docent and welcome desk.
- A space for demonstrations and vendor workshops.
- Two companion assisted bathrooms
- Outdoor Space should include urban gardens, green walls, and pedestrian ways to adjacent SPC buildings.
- Catering prep kitchen that exhibits appliance technologies.
- Every parking space removed must be replaced on-site in the same drainage basin.
- Setbacks from mitigation areas should be adhered to, unless D-B firm wishes to negotiate modifications to existing permits to accommodate a reduced parking impact.

Building Program

The minimum square footage shall be 1500 sf and a maximum of 2500 sf. The program shall include the following spaces:

- Entry / Reception Area (min. 150 sf)
- Appliance Exhibit Area (min. 300 sf)
- Indoor Exhibit and Training Area (approx. 900 sf)
- Outdoor Exhibit and Training Area (approx. 800 sf)
- Controls Exhibit Area for technology controls and displays (approx. 300 sf)
- Sustainable Garden Area
- Water Cistern Area
- Solar Panel Display Area
- Bathrooms
- Storage for chairs, tables, supplies, and MEP systems

Mechanical, Electrical, Plumbing

The GLDC is intended to embrace new technology and be a high performance building.

One of the overall intents of the GLDC is to embrace a new age of design, wherein the built environment relies solely on renewable forms of energy and operates year round without using utility produced energy, if possible. The design intent of the GLDC is to be a netzero building. To achieve this goal the D-B firm shall work to drive the buildings overall energy use intensity (EUI) down.

Intent of the GLDC is to change how people use water and to help redefine the 'waste' in the built environment, so that water becomes respected as a precious resource. Following this mission intent, the building water should be provided via well water and the sanitary system utilizing a septic tank system, if possible.

The buildings HVAC shall use energy efficient systems utilizing a form of geothermal heat rejection, as a priority, if possible.

Renewable Energy Technology

The overall design of the GLDC shall incorporate various renewable energy systems that will allow students, and the general public to learn about the latest renewable energy technologies available that reduce building energy consumption. Renewable energy systems should include as a minimum:

- Thermal solar domestic water heating.
- Photovoltaic panels shall be incorporated, to achieve the project intent of netzero the design shall include one or more of the following technologies:
    - Crystalline Silicon
    - Monocrystalline
    - Polycrystalline
    - Thin-Film Solar
    - Solar Power using a ground mounted 2 axis tracking system.

The design should be designed around the use of micro-inverters in lieu of string type.

Wind Energy should also be evaluated (should location analysis prove favorable to power production). The following technologies shall be evaluated.

- Small wind turbine

HVAC – Energy Efficiency

The HVAC system shall incorporate a form of geothermal heat rejection. The D-B firm shall investigate the economic and general feasibility of inclusion of an underground Bauer Foundation Geothermal HVAC Basement.

Should this solution prove not to be economically or physically viable, the alternates should include one or more of the following types of solutions:

- Ground Source Heat Pump (GSHP) systems:
  - Use of open loop ground source geothermal. (Note: A heat exchanger should be provided to separate the water loop from the refrigerant loop).
  - Use of a vertical borehole loop field.
  - Use of a horizontal loop field
- Thermally-Driven AC Systems:
  - Absorption Chillers using thermal solar
  - Heat pumps
- Water cooled variable refrigerant flow system

Smart building management technology, utilizing a dashboard kiosk shall be incorporated. The system shall be capable of be interfaced via internet. Setpoints and operation shall be capable of being manipulated utilizing desktop, smart phone or tablet.

Water Conservation Techniques

The GLDC water needs shall be configured based on the carrying capacity of the site: harvesting sufficient water to meet the needs of the facility while respecting the natural hydrology of the land, the water needs of the ecosystem the site inhabits, and those of its neighbors.

The bathroom water closets shall be configured for using gray water or composting toilets.

The D-B firm shall incorporate various water conservation techniques that will allow students, and the general public to further recognize water saving techniques and better understand the need to conserve water.

Minimum technologies shall include:

- Cistern for irrigation with back up gray water system
- Composting Toilets
- Xeriscaping

Other methodologies for water conservation included in the GLDC may include one or more of the following techniques:

- Low-flow water fixtures and trim
- Dual flush toilets

Indoor Air Quality

To promote improved indoor air quality, the GLDC must create a Healthy Interior Environment Plan that explains how the project will achieve an exemplary indoor environment including the following:

- Compliance with the current version of ASHRAE 62.
- Smoking must be prohibited within the project boundary.
- Results from an Indoor Air Quality test before and nine months after occupancy.
- Compliance with the CDPH Standard Method v1.1-2010 for all interior building products that have the potential to emit Volatile Organic Compounds
- Dedicated exhaust systems for kitchens, bathrooms, and custodial areas

- An entry approach that reduces particulates tracked in through shoes.
- An outline of a cleaning protocol that uses cleaning products that comply with the EPA Design for the Environment label.

The D-B Firm shall incorporate various indoor air quality techniques that will allow students and the general public to further recognize the importance of air quality in the built environment.

Other methodologies for air quality control included in the GLDC will include one or more of the following techniques:

- Indoor green wall
- No volatile organic compounds (VOC) – low emitting paint
- Forest Stewardship Council (FSC) Bamboo Flooring
- VOC-free, Formaldehyde free, FSC certified bamboo cabinetry

Sustainable Material Selection

The GLDC will be constructed with various sustainable materials. The use of these materials will allow students and the general public to further recognize sustainable material options and better understand the value and quality of such materials.

Exhibits

The following is a list of the proposed construction materials and technologies that the D-B Firm may wish to include as part of the project. The D-B Firm may wish to provide these as in-kind donations from the exhibitor and propose its integration into the education and training programs.

Solar

- Solar Shingles
- Solar Panels
- Solar Battery Storage
- Solar Monitors & Controls
- Solar Hot Water
- Solar Attic Fans
- Solar Window Film
- Solar Pumps for Geothermal Wells

Wind

- Wind Turbines

Building Materials & Equipment

- Energy Efficient Windows
- Energy Smart Surge Protectors
- Automatic Vents
- Energy Efficient Appliances
- Recycled Decking Material
- Recycled Carpeting & Flooring

- Steel Insulated Panels - Wall Structures
- Autoclaved Aerated Concrete
- VOC Reduced Paint
- Recycled Trusses & Tiedowns
- High-Impact Glass & Hurricane Shutters
- Recycled Conduit or bamboo conduit
- Roof Shingles Made from Recycled Tires

Geothermal

- Geothermal for HVAC & Research
- Surficial Shallow Wells, Casing & Solar/DC Pumps
- Deep Wells, Casing & Solar/DC Pumps
- Horizontal Closed Loop System
- Underground Basement & Geothermal Wall HVAC System
- Geothermal HVAC Units
- Thermal Couplers, Computers, Software, Geothermal Modeling Research Equipment
- Geothermal Monitors & Controls
- Geothermal Heat Exchanger
- Solar & Geothermal Power Generation

Lighting

- DC Lighting & Lighting Grids
- LED Lighting
- CFL Lighting
- Lighting Control Systems
- Natural & Reflective Lighting Systems
- Remote Energy Management System

Water Conservation

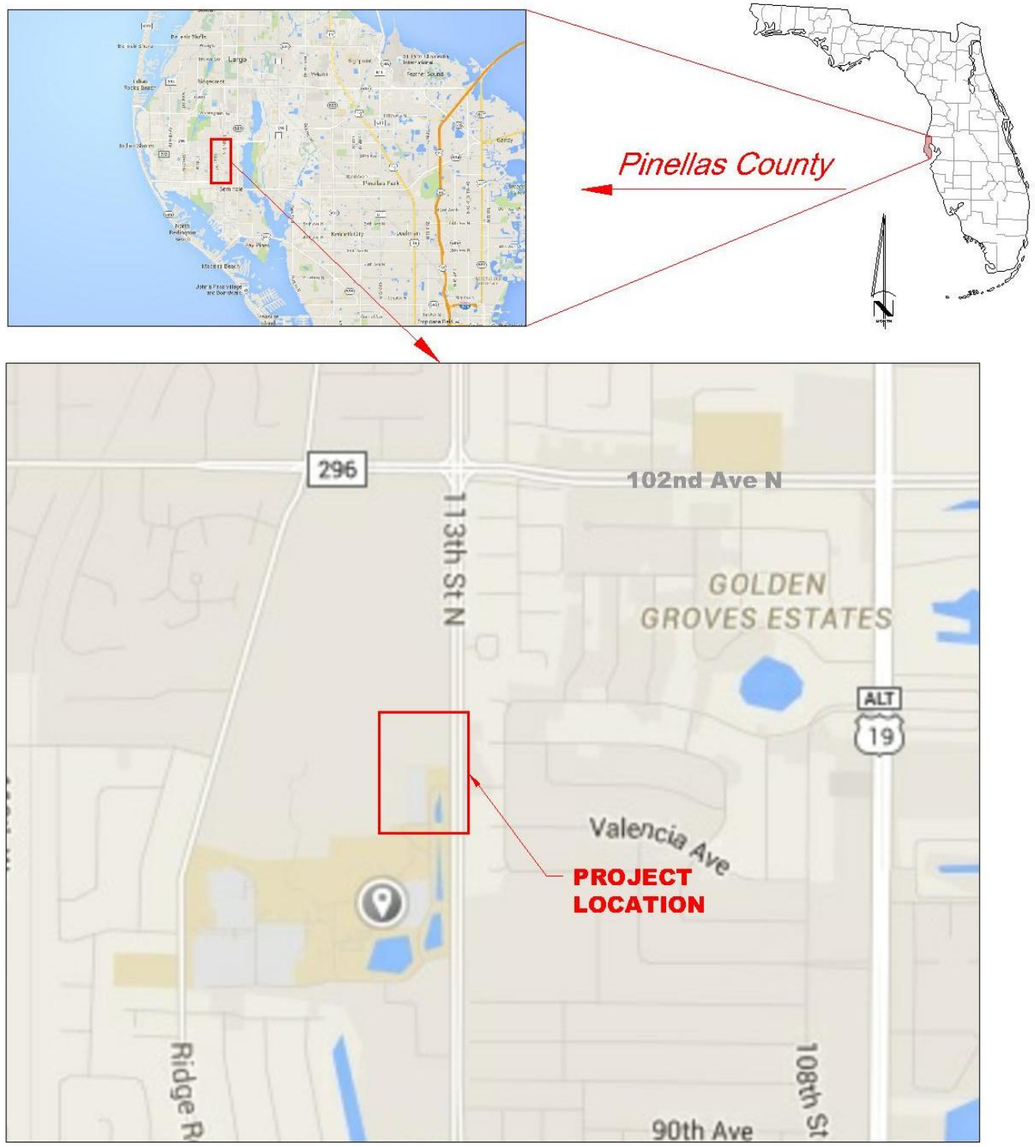
- Low-Flow Toilet
- Stormwater/Rainwater Harvesting Vault
- Tankless Hot Water Heaters
- Rainwater Harvesting Tanks
- Porous Pavement Made From Recycled Tires

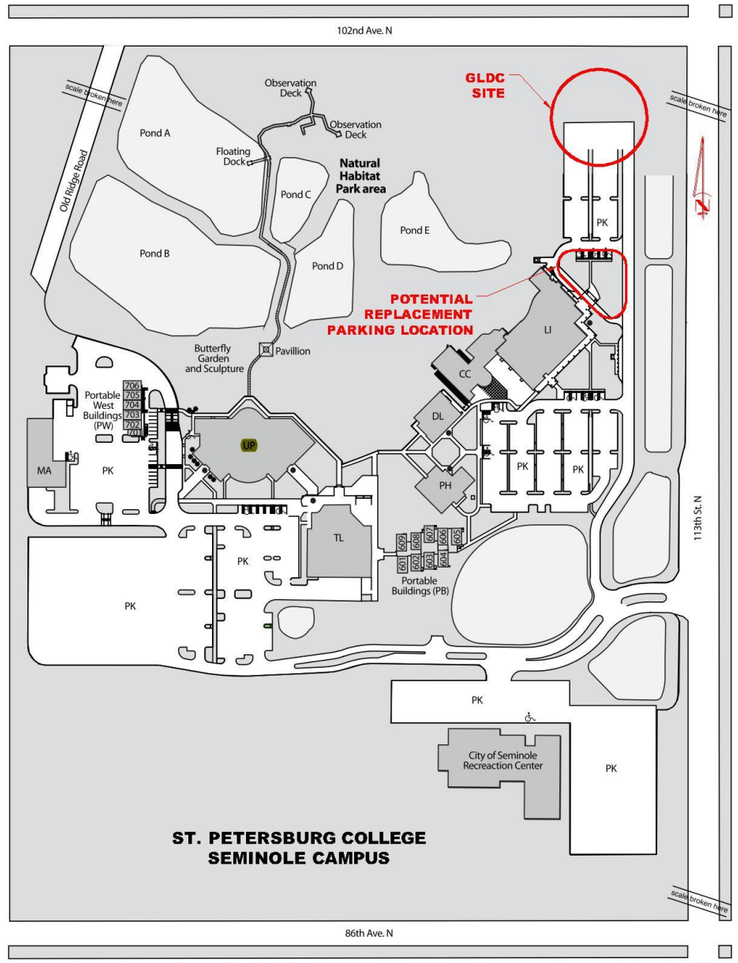
Landscaping

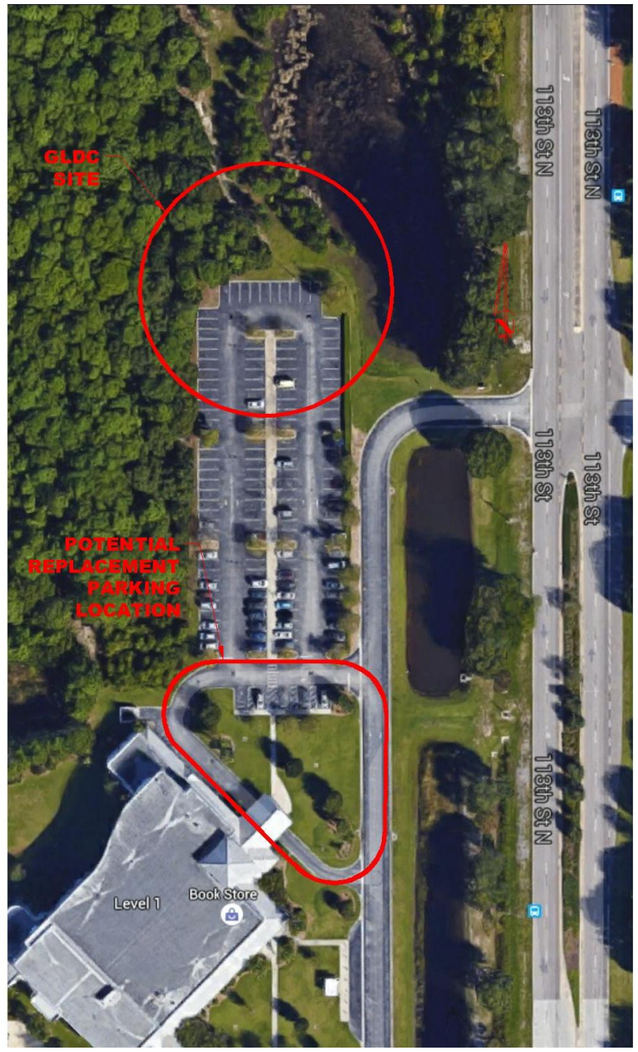
- Urban Gardening
- Hydroponic Gardening
- Solar Powered Irrigation Systems
- Micro-Irrigation (Low-Volume)
- Florida Friendly Water-Conserving Plantings
- Recycled Mulch Products
- Rain and/or soil moisture sensors

Geothermal & Solar Educational Displays

- Solar Roof Panels
- Shallow Wells Into Surficial Aquifer for Geothermal HVAC & Research
- Open Loop Deep Geothermal Wells for Geothermal HVAC & Research
- Closed Loop Geothermal Slinky Field for Geothermal HVAC & Research
- Closed Loop Geothermal Basement Loop for Geothermal HVAC & Research
- Stormwater & Rain Water Harvesting Tank/Vault & Research



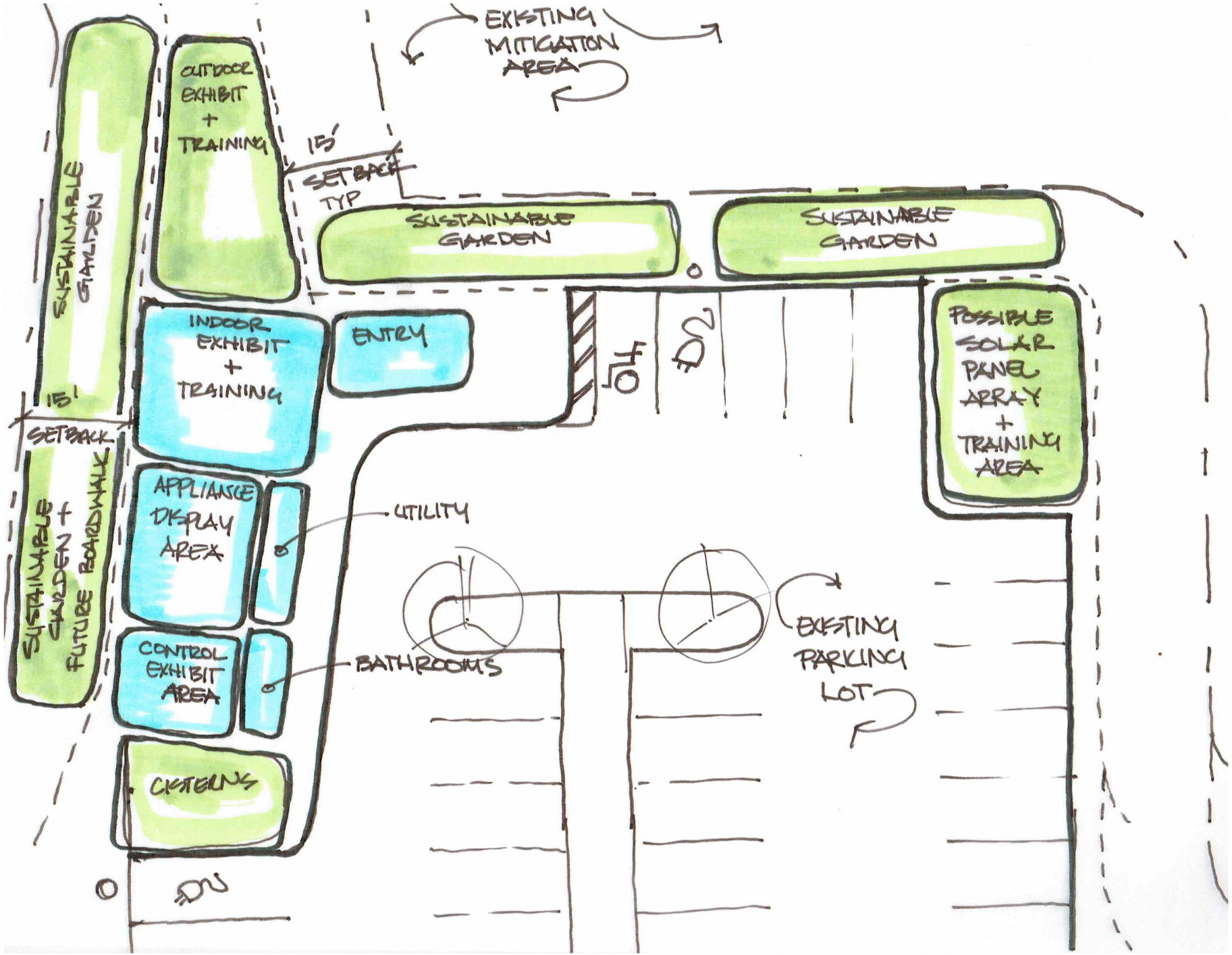




Green Living Demonstration Center

Project Location

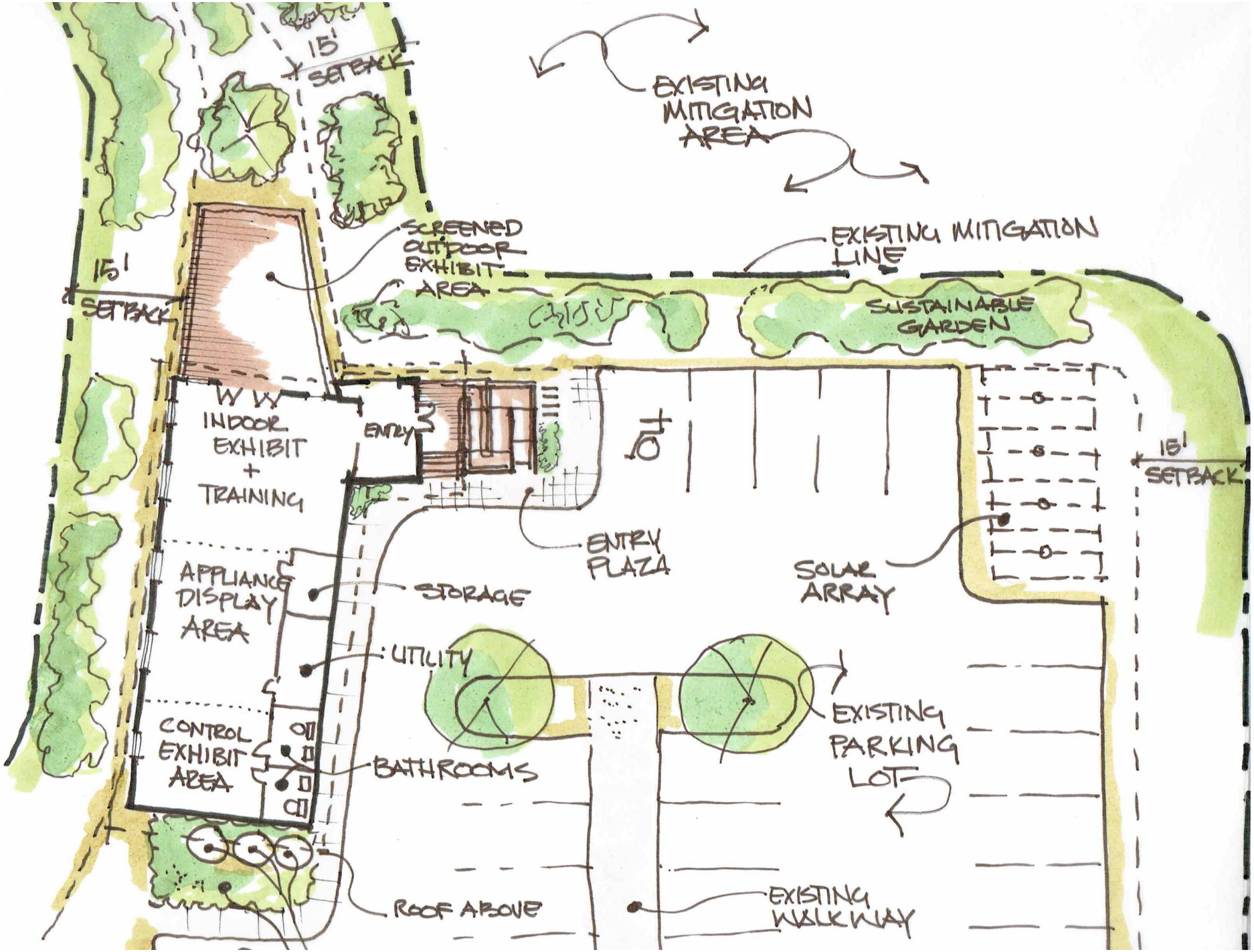
St. Petersburg College
SPC



Green Living Demonstration Center

Area Utilization Diagram

St. Petersburg College
SPC



Green Living Demonstration Center

Conceptual Site Plan

St. Petersburg College
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Green Living Demonstration Center

Perspective

St. Petersburg College
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