

Higher Education Energy Efficiency Partnership Program

BEST PRACTICES AWARDS



UC / CSU Sustainability Conference, June 2005



*A program created by the
UC/CSU/IOU Partnership
under the auspices of the
California Public Utilities Commission*

California State University, Fullerton

ARBORETUM VISITOR CENTER

PRESENTED BY:

Michael Craig Smith, AIA, Director, Office of Design and Construction

Brian Dougherty, FAIA, Principal, Dougherty & Dougherty



ARBORETUM VISITOR CENTER



- “Best Practice” in “Best Overall Design” UC/CSU Sustainability Conference 2005
- 100% donor funded \$3.4M non state capital project
- First specifically designed “Green Building” on the CSUF Campus
- Low-Tech cost effective approach to project sustainability
- Designed to meet LEED “Silver Certification”

Project Description / Background

- The Fullerton Arboretum is located on 26 acres within the CSUF Campus. The property is leased by the Fullerton Arboretum Authority which is comprised by the City of Fullerton Redevelopment Agency and the University. The Arboretum has been fund-raising for over 10 years to build a new and highly visible Visitor Center. In the Fall of 2002, with over \$3 million dollars raised, the Arboretum in conjunction with the University's Office of Design and Construction hired the Architectural firm of Dougherty and Dougherty to begin design on the facility. The selection of this firm was strongly based upon the Architects past experience with "green buildings" and sustainability design practices. Although the project was designed to meet Silver LEED Certification, due to severe budget restraints, the Arboretum was unable to fund the cost of commissioning and the LEED certification.

The project was bid in May, 2004 and awarded to Construct One, the lowest bidder for construction at a cost of \$2,283,395. The Notice To Proceed was issued in August, 2004 and the project is currently under construction with completion scheduled for September, 2005.

The project scope includes 3 classrooms, catering kitchen, covered pavilion, restrooms, historical museum, conference room and storage area for a total of 8,537 sq.ft. The actual cost of the buildings construction is \$267 per sq.ft. The overall project budget of \$3,374,654 also includes a new greenhouse and prefabricated metal work building already completed.

Project Process

- Plan for change! Buildings can grow and evolve over time.
- Look for the simple solution. The facility had to be built and operated on a minimal budget.
- Historical Design to evoke “Packing House” theme of the area
- Select cost effective, low-tech green building design solutions
- Promote Multi-User Functionality:
 - Teaching / Demonstration
 - Research
 - Display and Interpretation
 - Cultural
 - Social
 - Recreational
- Respect the Arboretum Environment

Technical Overview / Benefits Summary

■ Site Selection / Design

- Access to public transit and bicycle friendly environment
- Use of pervious paving

■ Water Efficiency

- Waterless urinals, low volume toilets, low flow faucets

■ Energy Efficiency

- Natural ventilation and natural light
- Envelope exceeds Title 24
- Lighting with multi-level switching and motion sensors
- Energy management system (EMS)

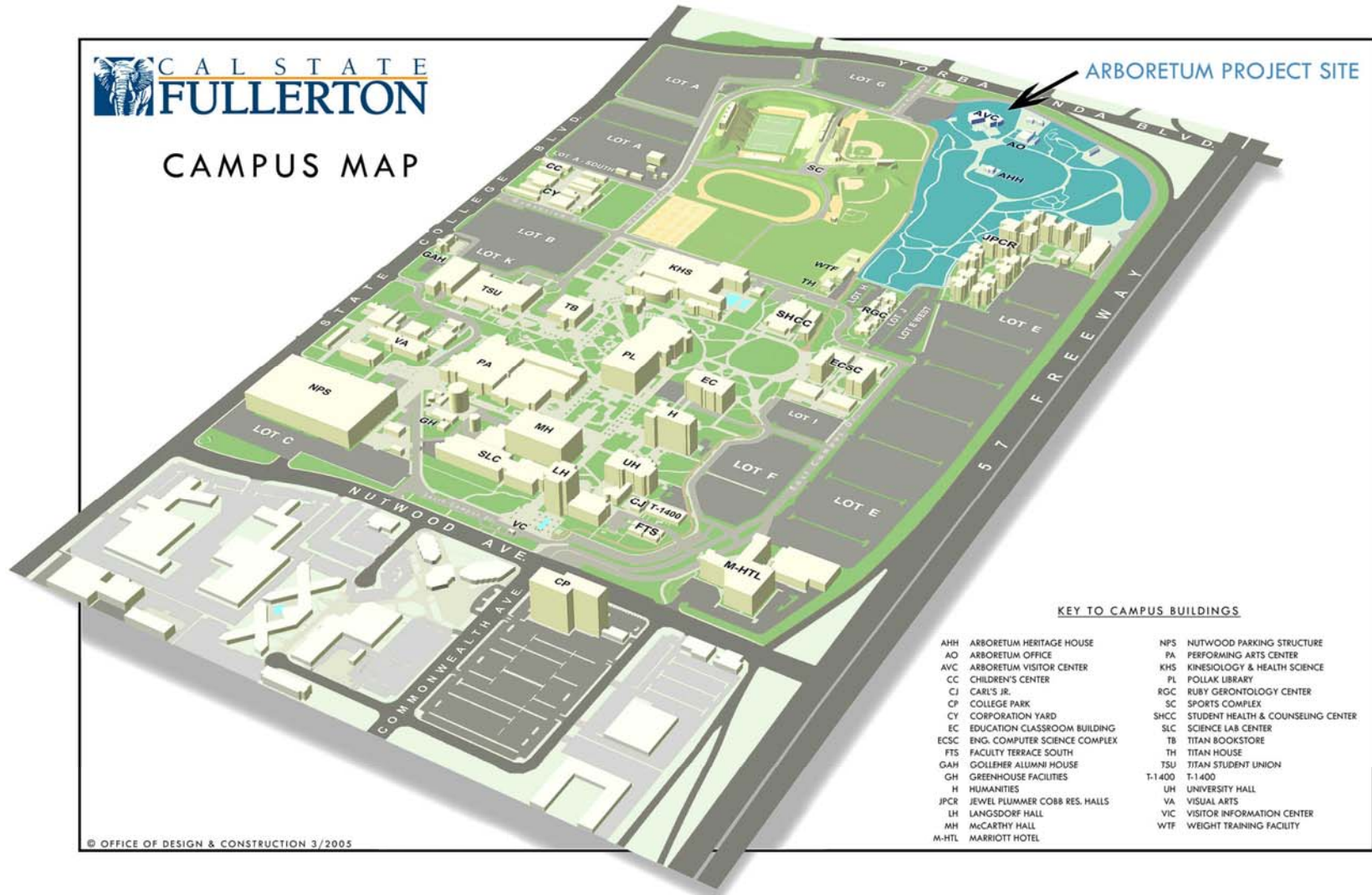
■ Material / Resource Efficiency

- Construction and material recycling program
- Recycled content for steel, drywall, insulation, flooring
- Wood cement board exterior siding

■ Healthy Indoor Environment

- Post construction building flush

Campus Context



Existing Conditions: Arboretum Entry



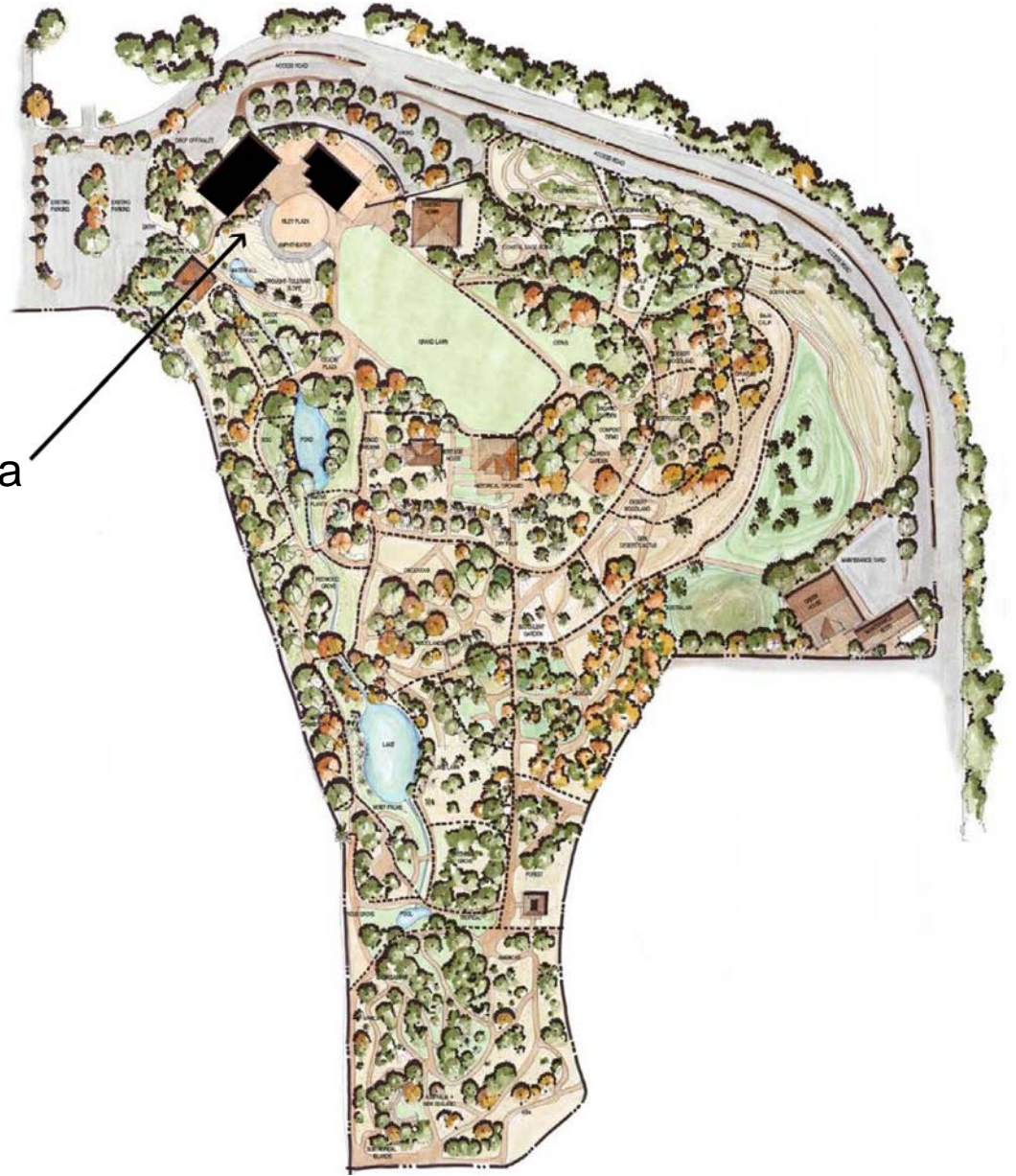
Existing Conditions: Building Site



Arboretum

26 Acres leased from CSUF

Project Area

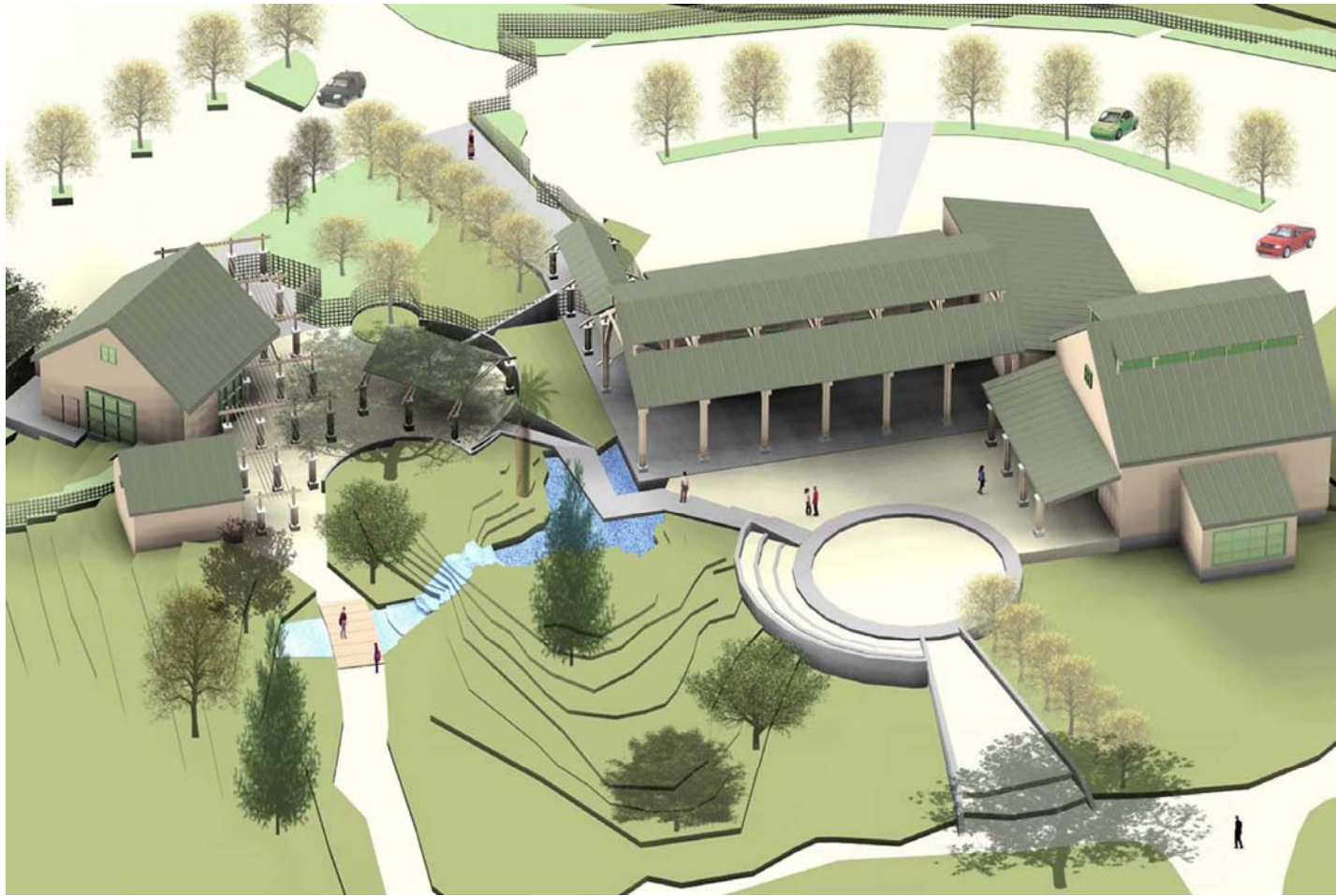


Site plan

Visitor Center



Aerial Perspective



Elevations

WEST



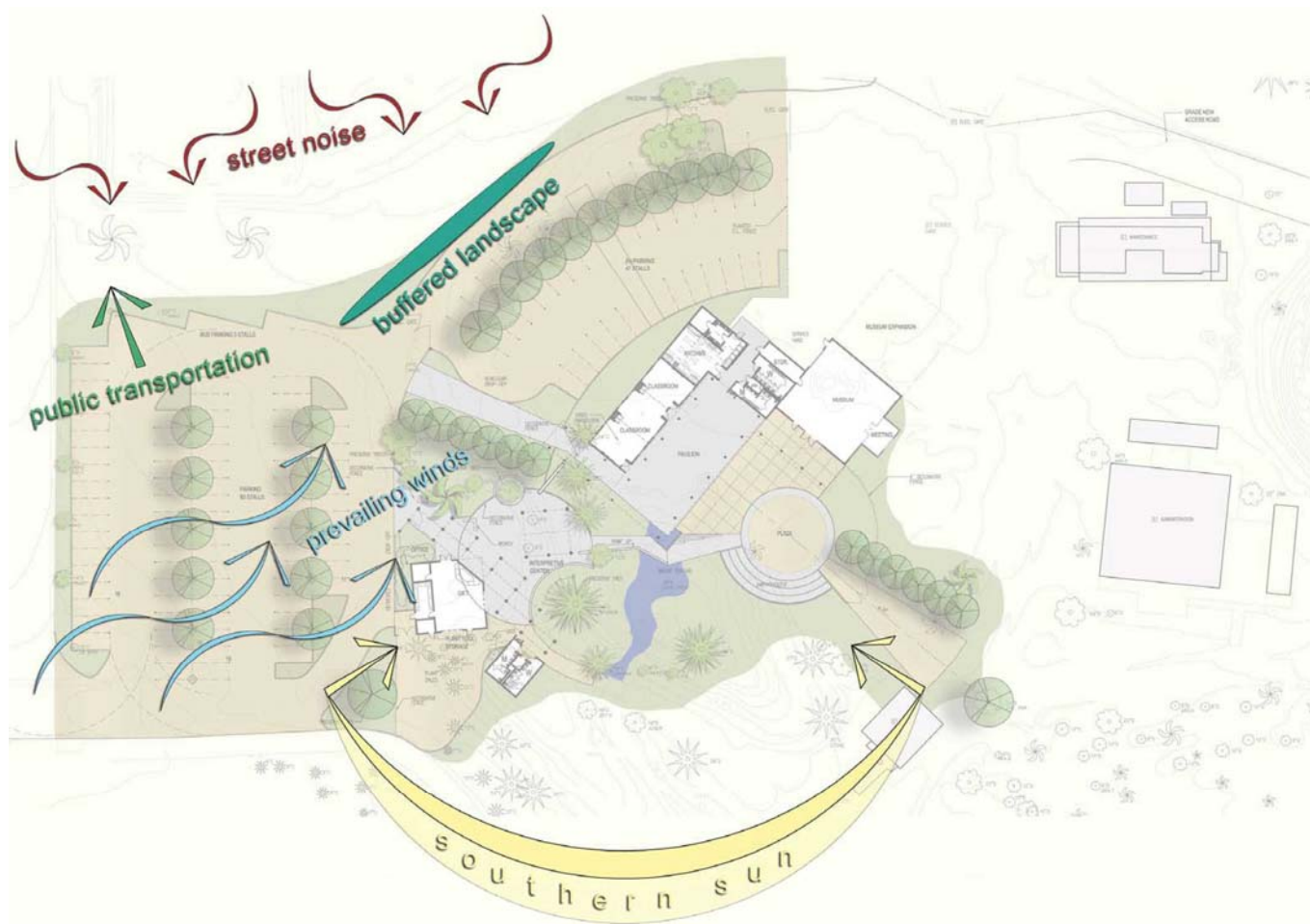
SOUTH



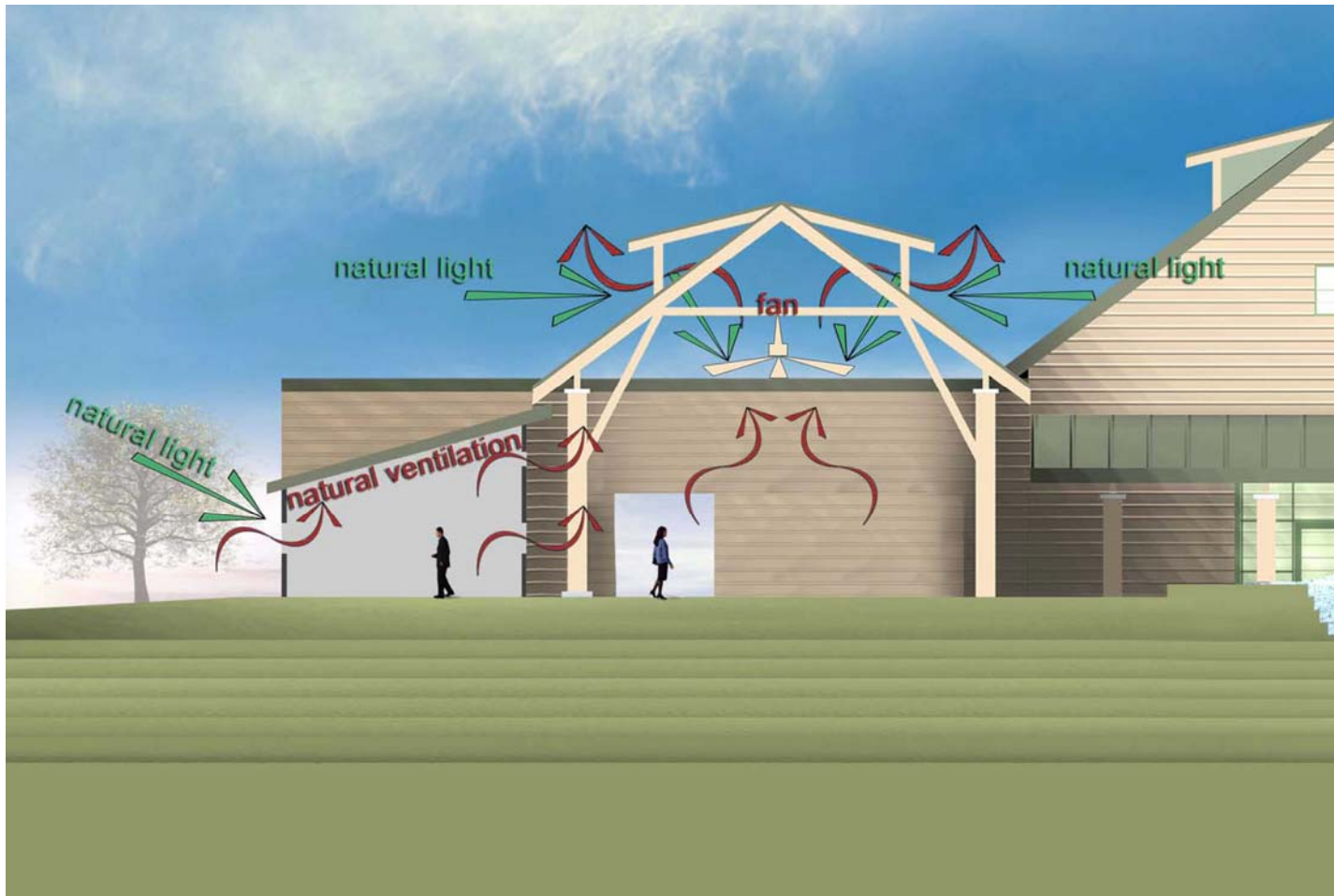
EAST



Site Environmental Factors



Building Section and Design Solutions



Construction : Service Side



Construction : Covered Pavilion and Museum



Construction : Museum Framing



Construction : Covered Entrance



Lessons Learned:

- Keep it simple, Low-Tech, cost effective design solutions for Green Building sustainability and to meet \$3.4M budget
- Be aware of LEED certification costs + \$40k
- Final LEED certification may not be best “model” for University?
- Future elements for increased sustainability
 - Photovoltaic panels
 - Solar panels
 - Grey Water System
 - Wind Generators
 - Others ?
- QUESTIONS?

FOR A COPY OF THIS PRESENTATION VISIT OUR WEBSITE

- Office of Design and Construction: <http://d-c.fullerton.edu>

Appendix

- Team Acknowledgements
- Contact Information
- Proposal Form: Best Practice UC/CSU Sustainability Conference 2005
- Vision Statement
- Sustainability Design Elements
- LEED Green Building Rating System
 - Designed to meet LEED Silver certification

Team Acknowledgements

- Arboretum
 - Greg Dymont, Director
 - Building Committee: Jerry Young, Bob Turner, Earl Mellott, Joe Maag
- University
 - Jay Bond, AVP Facilities Management
 - Michael Craig Smith, Project Director
 - Jack Bage, Associate Director
 - Tom Grayson, Project Manager
- Design Team
 - Architect: Dougherty & Dougherty, Architects
 - Civil Engineer: Parsons Transportation Group
 - Structural: KPFF Consulting Engineers
 - MEP Engineer: Fundament & Associates
 - Landscape: Purkiss-Rose-RSI
- Contractor
 - Construct 1 One Corp.

Contact Information

- **Arboretum Director:** Greg Dymment, gdymment@fullerton.edu (714)278-3250
- **Executive Dean:** Jay Bond, jbond@fullerton.edu (714)278-2122
- **Project Director:** Michael Smith, msmith@fullerton.edu (714)278-2352
- **Associate Director:** Jack Bage, jbage@fullerton.edu (714)278-2352
- **Project Manager:** Tom Grayson, tgrayson@fullerton.edu (714)278-2352
- **Architect:** Dougherty & Dougherty, Brian Dougherty, bpd@ddaia.com (714)427-0277
- **Civil Engineer:** Parsons Transportation Group, Robert Steaffens, CE (949)263-9322
- **Structural Engineer:** KPFF Consulting Engineers, William H. Thorpe, SE (949)252-1022
- **MEP Engineer:** Fundament & Associates, Paulo Fundament, PE (949)251-1131
- **Landscape:** Purkiss Rose, Steve Rose, rose@purkiss-rose-rsi.com (714)8713638
- **Contractor:** Construct 1 Corp, John Genta PA, jgenta@construct1.com (714)259-5400

JUNE 19-22, 2005

HIGHER EDUCATION ENERGY EFFICIENCY PARTNERSHIP - BEST PRACTICES PROPOSAL FORM

CONTACT INFORMATION

Contact Name/Title: Michael Smith
Campus: CSU Fullerton
Department: Office of Design and Construction
Street Address: T300 PO Box 6806
City/State/Zip: Fullerton, Ca. 92834
Telephone: (714) 278-2352
Fax: (714) 278-3408
Email: msmith@fullerton.edu

PROJECT CATEGORY (See attached project category descriptions)

New Construction/Major Rehabilitation (Project must have completed final design after January 1, 2002 and before January 1, 2005)

- HVAC Design
- Lighting Design
- Envelope Design
- Best Overall Sustainable Design

Energy Efficient Operations

- Innovative Control & Operations
- Load Management (e.g. Electric Demand Responsiveness, Thermal Energy Storage, etc.)
- Energy Information System/Monitoring-Based Commissioning
- Student Energy Conservation Projects

PROJECT/PRACTICE INFORMATION

Project/Practice Location: CSU Fullerton
Project/Practice Name: Arboretum Center/Fullerton Arboretum
Project/Practice Description: Please see attached material

Describe the features of the project or program that make it a best practice of potential interest to other campuses – e.g. replicability, innovation to control implementation cost, etc.:

Please see attached material

Approximate Implementation Cost (if any): No cost beyond standard project cost. Estimated Annual Energy Cost Savings: Estimated at 10% to 15% conservatively.
Any additional information for the selection team to consider:

Project has been designed to meet the criteria of a LEED Silver Certification. Please see attached descriptive information.

Please provide above information in sufficient detail to assist the selection team in understanding and evaluating the project.
Supplemental information (8 ½ x 11 format) in the form of photos, drawings, etc. may also be submitted.

SUBMISSION DIRECTIONS

Please submit project proposals by Friday April 15th to:
Maric Munn, P.E.
University of California, Office of the President
1111 Franklin Street – 6th Floor
Oakland, CA 94607
Email: Maric.Munn@ucop.edu
Fax: (510) 987-0752

HIGHER EDUCATION ENERGY PARTNERSHIP
SPRING 2005 BEST PRACTICES CATEGORY DESCRIPTIONS
NEW CONSTRUCTION/MAJOR RENOVATION

1. **Lighting Design - New construction/major renovation:** Projects in this category should demonstrate leadership in lighting delivery systems and lighting control systems design. Examples could include: energy efficient fixture selection and deployment, utilization of daylighting technologies, use of advanced lighting control technologies and other lighting innovations.
2. **HVAC Design - New construction/major renovation:** Projects in this category should demonstrate leadership in HVAC equipment selection, distribution system design and controls specification. Examples could include: appropriate equipment sizing, energy efficient equipment selection, maximizing the benefits of local climate, air distribution system innovation and other HVAC innovations.
3. **Energy Efficient Building Envelope Design - New construction/major renovation:** Projects in this category should demonstrate leadership in building envelope design. Examples could include: energy efficient glazing selection, effective deployment of solar control devices and other innovations.
4. **Best overall Sustainable Design - New construction/major renovation:** This category is for best overall sustainable design for a new building or major building renovation. The building must have completed design between Jan 1, 2002 and Jan 1, 2005.

ENERGY EFFICIENT OPERATIONS

1. **Control and Operations:** Projects in this category should demonstrate leadership in efficient building/system control and operations. Examples could include: building control system retrofit, building/system tune-ups for maximizing efficiency, occupant energy efficiency programs and other operational innovations.
2. **Load Management:** Projects/programs in this category should demonstrate leadership in demand responsiveness for existing buildings and systems. Examples could include: deployment and optimized usage of thermal energy storage, on-peak demand response control strategies and other innovative load management projects/programs.
3. **Energy Information Systems/Monitoring Based Commissioning:** Projects/programs in this category should demonstrate leadership in the use of energy consumption data for efficient building/systems operations. Examples could include: effective energy use reporting, use of monitoring data for building re-commissioning, ongoing monitoring for building/system diagnostics, and other innovation use of building energy consumption data.
4. **Student Energy Efficiency:** This award will spotlight a program, organization or group that has demonstrated real leadership in student-led energy efficiency and conservation efforts. Award candidates in this category will be engaged in campus activities that seek to leverage student interest and commitment to sustainability in order to increase energy awareness on campus, realize environmentally-friendly campus policies and commitments, and involve students in efficiency activities that compliment their campus' goals and that result in measurable energy savings.

VISION

The Fullerton Arboretum seeks to engage the visitor on multiple levels. Education, meditation, recreation and simple esthetic delight are the foundation of this University and Community asset. As the Arboretum has matured, the need for a more sophisticated support infrastructure has become apparent. This challenge has presented the Arboretum with the opportunity to not only enhance their physical setting, but to act as an example to those who visit about how we can build in harmony with nature.

The goal of this project is to create a facility that is designed to the level of a Silver rating in accordance with the criteria of the US Green Building Council LEED rating system.

This is the first phase of a two phase master planned project. Housed within 9500 square feet of new building will be three classrooms, a catering kitchen, museum space for exhibiting historical agricultural artifacts and a conference room. The featured area of the new design is a large open air pavilion integrated with a naturally landscaped courtyard and amphitheater. With the enhanced capabilities of these new structures, the mission of the Arboretum will be shared by a wider range of new visitors.

The sustainable features of the design are focused in six key areas:

- Sustainable Site Design
- Water Efficiency
- Energy and Atmospheric Quality
- Material and Resource Efficiency
- Indoor Environmental Air Quality
- Innovation in the Design Process

The creation of a sustainable site includes a series of decisions that, in aggregate, touch softly on the land. The Arboretum includes:

- A carefully designed erosion control plan for construction
- Selection of a previously developed site to preserve natural open space.
- Location of the facility near a public bus line to encourage use of public transportation.
- Creation of a bicycle friendly destination with the opportunity to store bikes and allow the employees to shower.
- Reduce site disturbance through the restoration of previously developed land and a ratio of building to open space that improves the prior land use.
- Reduction in storm water run off with the use of pervious paving materials, including decomposed granite walkways and pervious concrete parking areas.

This approach is also supportive of storm water treatment prior to any runoff leaving the site.

- Heat island reduction through the use of light colored pervious surfaces in open areas.
- Light pollution reduction through the selection of specific site lighting fixtures with directed photo metrics.

A number of water efficient features help to lower the consumption of water in the new facility while better serving each visitor.

- The use of water efficient landscape irrigation and native plant species of a drought tolerant variety greatly reduce water consumption.
- Waterless urinals, low volume toilets and low flow faucets yield as much as a 41% reduction in water consumption

Creating an energy efficient building envelope and support infrastructure will yield long-term savings in cost and impact to the environment.

- High efficiency HVAC units utilizing no CFC's (puron is used) are the basic space conditioning systems for the facility.
- The building exceeds the basic requirements of Title 24 for energy efficiency.
- The Arboretum is investigating the opportunity to purchase green power for use in the facility.
- Selection of direct/indirect energy efficient lighting fixtures that provide a non glare interior environment. Light controls provide for stepped lighting and the ability to respond to daylight conditions.
- Integrated energy management system that allows local and remote control of HVAC and other systems in the facility.

Material and Resource efficiency is integrated throughout the project.

- Materials are collected, sorted and stored during construction for recycling.
- Recycled content is specified for steel, drywall, insulation and flooring.
- Wood cement board is used for building siding for increased waste material recycled content as well as improved long-term maintenance with a factory applied color coat finish.
- Local materials are specified for inclusion in the project in a variety of areas.

The creation of a toxin free interior with a high level of air quality is critical to the overall program.

- Air flow has been designed to optimize the quality of the interior environment. This is combined with the requirement that the facility be tobacco free.
- The building is scheduled to be flushed for 2 weeks prior to occupancy to enhance the air quality.
- Low emitting materials are used throughout the project including paint, adhesives, sealants, etc.
- All composite wood materials in the project are low VOC emitting.
- Operable windows provide natural light and ventilation to all interior spaces
- Views are provided for occupants of all interior spaces to exterior environment.

The process of creating an environmentally friendly design goes one step further in the development of signage and educational content that shares the lessons of the building design with the public.

| LEED Green Building Rating System v2.0 | | | SUMMARY MATRIX | | | | | |
|-----------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|---------------|-----------|----------|---|
| Project Name: | Fullerton Arboretum | | March 3, 2004 | | Scores | | | |
| Credit ID | Credit Title | | Comments | | Low | High | Change | |
| Platinum 52 :: Gold 39 :: Silver 33 :: Certified 26 | | | | | Total Score: | 28 | 43 | 3 |
| SUSTAINABLE SITES (SS) | | | | | 6 | 10 | 0 | |
| SS.P01 | Erosion and Sedimentation Control | REQUIRED - Erosion Control Plan is in project documents | YES | YES | no | | | |
| SS.C01 | Site Selection | QUALIFIES - Site not on flood plain, wetland, etc. | 1 | 1 | no | | | |
| SS.C02 | Urban Redevelopment | N/A - Requires 60,000 sf/acre | n/a | n/a | n/a | | | |
| SS.C03 | Brownfield Redevelopment | N/A - Site is not a brownfield | n/a | n/a | n/a | | | |
| SS.C04.1 | Alternative Transportation, Public Transportation Access | QUALIFIES - Bus lines to campuses | 1 | 1 | no | | | |
| SS.C04.2 | Alternative Transportation, Bicycle Friendly | UNCERTAIN - Showers in gym must be within 200 yards of project site. Bike racks to be added to plans. | 0 | 0 | drwg | | | |
| SS.C04.3 | Alternative Transportation, Alternative Fuel Refueling Stations | UNCERTAIN - Could be included. Stations to be within site boundary | 0 | 1 | drwg | | | |
| SS.C04.4 | Alternative Transportation, Parking Reductions | QUALIFIES - Only if "future parking" area is excluded. | 1 | 1 | no | | | |
| SS.C05.1 | Reduced Site Disturbance, Protect and Restore Open Space | QUALIFIES - Only if "future parking" area is excluded. Landscape half of remaining area with native/ adapted species. | 1 | 1 | no | | | |
| SS.C05.2 | Reduced Site Disturbance, Maximize Open Space | QUALIFIES - Open space exceeds building footprint | 1 | 1 | no | | | |
| SS.C06.1 | Stormwater Management, Flow Reduction | UNCERTAIN - Requires calculation by civil engineer. Requires no net increase in runoff from pre-existing conditions | 0 | 1 | no | | | |
| SS.C06.2 | Stormwater Management, Flow Treatment | LIKELY - Requires calculation by civil engineer. Requires at least 80% of runoff to be infiltrated | 0 | 1 | no | | | |
| SS.C07.1 | Reduce Heat Islands, Non-Roof Surfaces | LIKELY - Requires area calculation by architect. Requires 30% of impervious area to be light colored or shaded. Exclude DG from calculation | 0 | 1 | no | | | |
| SS.C07.2 | Reduce Heat Islands, Roof Surfaces | N/A - Metal roof does not qualify | n/a | n/a | n/a | | | |
| SS.C08 | Light Pollution Reduction | LIKELY - Requires point by point photometric calc for site lighting to verify | 1 | 1 | | | | |
| WATER EFFICIENCY (WE) | | | 3 | 3 | 0 | | | |
| WE.C01.1 | Water Efficient Landscaping, 50% reduction | LIKELY - Use efficient irrigation equipment and drought tolerant species. | 1 | 1 | no (?) | | | |
| WE.C01.2 | Water Efficient Landscaping, Potable Free System | N/A - No source of non-potable water | n/a | n/a | n/a | | | |
| WE.C02 | Innovative Wastewater Technologies | NOT APPLICABLE - Reclaimed water not used or available | n/a | n/a | n/a | | | |
| WE.C03.1 | Water Use Reduction, 20% Reduction | LIKELY - Use low-flow lavs (0.5 gpm) and waterless urinals - yields 41% reduction | 1 | 1 | drwg | | | |
| WE.C03.2 | Water Use Reduction, 30% reduction | LIKELY - Use low-flow lavs (0.5 gpm) and waterless urinals | 1 | 1 | drwg | | | |
| ENERGY AND ATMOSPHERE (EA) | | | 2 | 8 | 0 | | | |
| EA.P01 | Fundamental Building Systems Commissioning | REQUIRED - Owner to hire commissioning agent. Commissioning specs should be included in bid documents | Pre | Pre | specs | | | |
| EA.P02 | Minimum Energy Performance | REQUIRED/QUALIFIES - Meets Title 24 2001 | Pre | Pre | no | | | |
| EA.P03 | CFC Reduction in HVAC&R Equipment | REQUIRED/QUALIFIES - All new HVAC equipment--no CFCs | Pre | Pre | no | | | |
| EA.C01.1a | Optimize Energy Performance, 2.5%-7.5% new (above Title 24) | LIKELY - Meet Title 24 | 1 | 1 | no | | | |
| EA.C01.1b | Optimize Energy Performance, 7.51%-12.5% new | UNCERTAIN - Requires energy model | 0 | 1 | no | | | |
| EA.C01.2a | Optimize Energy Performance, 12.51%-17.5% new | UNCERTAIN - Requires energy model | 0 | 1 | ? | | | |
| EA.C01.2b | Optimize Energy Performance, 17.51%-22.5% new | UNCERTAIN - Requires energy model | 0 | 1 | ? | | | |
| EA.C01.3a | Optimize Energy Performance, 22.51%-27.5% new | UNCERTAIN - Requires energy model | 0 | 1 | ? | | | |
| EA.C01.3b | Optimize Energy Performance, 27.51%-32.5% new | UNCERTAIN - Requires energy model | 0 | 0 | ? | | | |
| EA.C01.4a | Optimize Energy Performance, 32.51%-37.5% new | UNCERTAIN - Requires energy model | 0 | 0 | ? | | | |
| EA.C01.4b | Optimize Energy Performance, 37.51%-42.5% new | N/A | n/a | n/a | n/a | | | |
| EA.C01.5a | Optimize Energy Performance, 42.51%-47.5% new | N/A | n/a | n/a | n/a | | | |
| EA.C01.5b | Optimize Energy Performance, 47.51% new | N/A | n/a | n/a | n/a | | | |
| EA.C02.1 | Renewable Energy, >2.5% Contribution | UNCERTAIN - Consider a PV installation by an ESCO (energy service company) | 0 | 1 | drwg/ spec | | | |
| EA.C02.2 | Renewable Energy, >7.5% Contribution | NOT APPLICABLE | n/a | n/a | n/a | | | |
| EA.C02.3 | Renewable Energy, >15.5% Contribution | NOT APPLICABLE | n/a | n/a | n/a | | | |
| EA.C03 | Additional Commissioning | N/A - Requires commissioning during design | n/a | n/a | n/a | | | |
| EA.C04 | Elimination of HCFCs and Halons | QUALIFIES - Refrigerant is puron | 1 | 1 | no | | | |
| EA.C05 | Measurement & Verification | N/A - Not appropriate for this building type | n/a | n/a | n/a | | | |
| EA.C06 | Green Power | UNCERTAIN - Option for the owner | 0 | 1 | no | | | |

| LEED Green Building Rating System v2.0 | | | SUMMARY MATRIX | | |
|-----------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|---------------|
| Project Name: | Fullerton Arboretum | March 3, 2004 | Scores | | |
| Credit ID | Credit Title | Comments | Low | High | Change |
| Platinum 52 :: Gold 39 :: Silver 33 :: Certified 26 | | Total Score: | 28 | 43 | 3 |
| MATERIALS AND RESOURCES (MR) | | | 5 | 7 | 0 |
| MR.P01 | Storage and Collection of Recyclables | REQUIRED - Coordinate with campus recycling, provide space for bins | Pre | Pre | no |
| MR.C01.1 | Building Reuse, Maintain 75% Existing Shell | N/A | n/a | n/a | n/a |
| MR.C01.2 | Building Reuse, Maintain 100% Existing Shell | N/A | n/a | n/a | n/a |
| MR.C01.3 | Building Reuse, Maintain 100% Existing Shell and 50% Non-Shell | N/A | n/a | n/a | n/a |
| MR.C02.1 | Construction Waste Management, Salvage/Recycle 50% | LIKELY - Require in specs | 1 | 1 | spec |
| MR.C02.2 | Construction Waste Management, Salvage/Recycle 75% | LIKELY - Require in specs | 1 | 1 | spec |
| MR.C03.1 | Resource Reuse, Specify 5% | N/A | n/a | n/a | n/a |
| MR.C03.2 | Resource Reuse, Specify 10% | N/A | n/a | n/a | n/a |
| MR.C04.1 | Recycled Content, Specify 25% | LIKELY - Require in specs. Steel, drywall, insulation, carpet, hardboard | 1 | 1 | spec |
| MR.C04.2 | Recycled Content, Specify 50% | UNCERTAIN - Target achievement in specs | 0 | 1 | spec |
| MR.C05.1 | Local/Regional Materials, 20% Manufactured Locally | LIKELY - Require in specs. Concrete, landscaping, steel | 1 | 1 | spec |
| MR.C05.2 | Local/Regional Materials, 10% Harvested/Extracted/Recovered Locally | UNCERTAIN - Target achievement in specs. Concrete and landscaping | 0 | 1 | spec |
| MR.C06 | Rapidly Renewable Materials | N/A - Difficult to achieve | n/a | n/a | n/a |
| MR.C07 | Certified Wood | LIKELY - Specify for at least 50% of wood materials cost | 1 | 1 | spec |
| INDOOR ENVIRONMENTAL QUALITY (EQ) | | | 10 | 12 | 0 |
| EQ.P01 | Minimum IAQ Performance | REQUIRED - HVAC designer to include in design. Use LEED standards | Pre | Pre | no |
| EQ.P02 | Environmental Tobacco Smoke (ETS) Control | REQUIRED/QUALIFIES - California law. Note outdoor smoking areas | Pre | Pre | no |
| EQ.C01 | Carbon Dioxide (CO2) Monitoring | UNCERTAIN - Consider adding to project--1 sensor per occupied zone, one outside | 0 | 1 | drwg/ spec |
| EQ.C02 | Increased Ventilation Effectiveness | LIKELY - Requires mechanical engineer to prepare ADPI calculations. Design should qualify. | 1 | 1 | no |
| EQ.C03.1 | Construction IAQ Management Plan, During Construction | LIKELY - Require in specs, verify that MERV 13 filters can be used | 1 | 1 | spec |
| EQ.C03.2 | Construction IAQ Management Plan, After Construction | LIKELY - Require 2-week building flushout in specs | 1 | 1 | spec |
| EQ.C04.1 | Low-Emitting Materials, Adhesives and Sealants | LIKELY - Require low-VOC adhesives and sealants for interior surfaces. Include in specs. Follows local requirements | 1 | 1 | spec |
| EQ.C04.2 | Low-Emitting Materials, Paints | LIKELY - Require low-VOC paints for interior surfaces. Include in specs | 1 | 1 | spec |
| EQ.C04.3 | Low-Emitting Materials, Carpet | N/A - No carpet in project | n/a | n/a | n/a |
| EQ.C04.4 | Low-Emitting Materials, Composite Wood | UNCERTAIN - Requires all composite wood to be low emitting (plywood, casework, door cores, etc.) Marine grade plywood is ok. Difficult to do both this and certified wood. Check with casework manufacturer | 1 | 1 | spec |
| EQ.C05 | Indoor Chemical and Pollution Source Control | LIKELY - Include permanent entryway grates, make janitor sink last point of connection | 1 | 1 | drwg |
| EQ.C06.1 | Controllability of Systems, Operable Windows | QUALIFIES - Sufficient operable windows and lighting controls in occupied spaces | 1 | 1 | no |
| EQ.C06.2 | Controllability of Systems, Individual Controls | N/A - No non-perimeter spaces | n/a | n/a | n/a |
| EQ.C07.1 | Thermal Comfort, Compliance with ASHRAE 55-1992 | LIKELY - Mechanical design to comply with ASHRAE 55. | 1 | 1 | no |
| EQ.C07.2 | Thermal Comfort, Permanent Monitoring System | NOT APPLICABLE - Not recommended in this climate | n/a | n/a | n/a |
| EQ.C08.1 | Daylighting and Views, Distribution Quality | UNCERTAIN - Depends on window sizes and visual transmittance | 0 | 1 | ? |
| EQ.C08.2 | Daylighting and Views, Access to Views | QUALIFIES - All occupied areas have access to views | 1 | 1 | no |
| INNOVATION AND DESIGN PROCESS (ID) | | | 2 | 3 | 3 |
| ID.C01.1 | Innovation in Design 1: Excellence in Performance WEc3 | LIKELY - Use low-flow lavs (0.5 gpm) and waterless urinals | 1 | 1 | 1 |
| ID.C01.2 | Innovation in Design 2: Sustainability Education | LIKELY - Include signage and tour program | 0 | 1 | 1 |
| ID.C01.3 | Innovation in Design 3: | TBD | 0 | 0 | 0 |
| ID.C01.4 | Innovation in Design 4: | TBD | 0 | 0 | 0 |
| ID.C02 | LEED Accredited Professional | QUALIFIES | 1 | 1 | 1 |

END