UCDAVIS
Brewery, Winery & Food Pilot Facilities

LEED® Platinum Alternate Submittal

Project Number - 9507900

September 5th, 2008

Index

General Approach

Through an integrated design process, the Base Bid Design targets a high level of performance- 45 points on the checklist. The LEED Platinum Alternate builds on this effort, applying additional funds to achieve a higher level of energy efficiency and environmental contribution.

In general, the intent has been to identify those credits that relate most directly to research programs and that best contribute to operating efficiency.

As shown on the following Checklist, the Platinum Alternate targets 56 points, 4 more than the minimum required for this level of certification. This contingency is intended to allow for points that are not achievable as a result of design refinement or USGBC review. We have also included a contingency point in the Innovation in Design category.

Improved Performance by Category

Sustainable Sites

SS 5.1 - Reduced Site Disturbance- Protect or Restore Open Space. The original premise offered by UC Davis- that this might be an incremental addition to a dedicated natural area- is weighed against direct benefits to this site. Base design is modified to reduce DG area by 2350 sf/ Replace same area with planting.

SS 6.2 - Stormwater Management- Treatment Water Efficiency. Provide 17,000 gal storage tank. Capture 90% of rainfall falling on the 54,000 sf of impervious surface. 90% of the MAP for an arid region (less than 20 inches) equals 0.5 inches, or 17,000 gallons total of water. Comply with Yolo County regulations (35 cy of storage/ acre). 2 acre project site need 70 cubic yards of storage, or 14,200 gallons. The 17,000 gallons meets LEED criteria for this credit and exceeds the local requirement for storage.

Water Efficiency

WE 1.2 - Water Efficient Landscaping - No Potable Use or Irrigation. 140,000 gallon tank storage is required to meet 180,000 gallon annual irrigation demand.

WE 2 - Innovative Wastewater Technologies
Wastewater re-use includes Gray Water Mains to points of use, a dedicated 2000 gal. Gray Water Tank, Equipment And Rigging.

Energy and Atmosphere

EA 2.1, 2.2, 2.3 - On-Site Renewable Energy. Photovoltaic panels meeting the requirements for these credits are included with this proposal.

Materials and Resources

While site context and the building program prevent or limit application of some materials, two additional credits are proposed from this category.

MR 4.2 - Recycled Content: 20% (post-consumer + ½ pre-consumer)

MR 5.2 - Regional Materials- 20% Extracted, Processed & Manufactured Regionally

Indoor Environmental Quality

IEQ 4.3 - Low-Emitting Materials- Carpet Tile (not allowed by current program) can be re- evaluated for Offices.

Innovation in Design

Innovations proposed for the base bid were selected for as relatively low-cost inclusions that had been validated by USGBC review. An additional innovation is proposed for this submittal: the Low Energy Alternative Water Treatment System. This feature, in combination with the waste water recovery systems described in Credits SS 6.2 and WE 1.2 is very likely to be recognized as an innovation.

Overall Performance

The Platinum Alternate has been developed to a target point level above minimum for this category.

Additional measures to conserve energy may be desirable but are not strictly required to meet overall performance goals. Similarly, features such as High Thermal Mass and Green Roofs are recognized as contributors to architectural quality and may be potential expectations for donors.

These and other features are described and illustrated in the following section, “Beyond Platinum”.

Item:		Description - from LEED for New Construction Version 2.2 unless otherwise noted or modified below.	Required Points	Adopted Points	LEED Documentation	Phase when documentation is provided	Documentation Notes	Approach/ Project Application	Status
SUSTAINABLE SITES									
SS Prerequisite 1- Erosion & Sedimentation Control			**yes**		University/ Design Builder	CA, CD	University	Design Builder will provide Erosion and Sedimentation Control (ESC) Plan to meet EPA 2003 General Permit/ Campus	**Assumed for Base Bid**
SS 1 - Site Selection				**0**	NA		University	Described as non-applicable by the University. Conditions for compliance (farmland, habitat, floodplain) not verified.	**Not Included for this Proposal**
SS 2 - Development Density		Sites located within an existing minimum development density of 60,000 square feet per acre (two story downtown development).		**0**	University	SD	University Report	Does not meet Development Density requirements (60,000 sf/ acre) or Community Connectivity	**Not Included for this Proposal**
SS 3- Brownfield Site				**0**	NA		University Report	The site is not a recorded EPA Brownfield site.	**Not Applicable**
SS 4.1 - Alternative Transportation- Public Transportation Access				**0**	University	SD	Bus service area map	None – bus service appears restricted to a single stop (Mrak Hall) exceeds ¼ mile distance. Included in proposal checklist.	**Not Included for this Proposal**
SS 4.2 - Alternative Transportation- Bicycle Storage & Changing Rooms			**1**		University/ Design Builder	CD	University occupancy calculation	Bicycle racks, showers and changing rooms have been provided as described in the Program Requirements.	**Assumed for Base Bid**
SS 4.3 - Alternative Transportation- Alternative Fuel Vehicles			**1**		University	SD	University report on bus ridership	University will provide.	**Assumed Credit for this Proposal**
SS 4.4 - Alternative Transportation- Parking Capacity			**1**		University	SD	University report on parking capacity	University will provide.	**Assumed Credit for this Proposal**
SS 5.1 - Reduced Site Disturbance- Protect or Restore Open Space				**1**	University	SD	University will provide report.	Site area equal or greater than 50% of impervious surface is assigned to planting with native/ adapted planting. (54,200sf/ 2 = 27,100sf planted area). See Site Plan.	**Assumed for Platinum Alternate**
SS 5.2 - Reduced Site Disturbance- Development Footprint		Designate open space equal to the development footprint. The open space will be at another campus site placed in a permanent reserve status.	**1**		University	SD	University report on development mitigation	Site area (+/- 45,000 sf) is allocated to achieve this credit.	**Assumed Credit for this Proposal**
SS 6.1 - Stormwater Management- Rate and Quantity		[Existing imperviousness less than 50%] implement a stormwater management plan that prevents the post-development peak discharge rate and quantity from exceeding the pre-development peak discharge rate and quantity for the one- and two-year 24-hour design storms.		**1**	University/ Design Builder	SD, CD	Provide calculation of run-off in SD, Reference site applicable drawings at CD	Design minimizes paving to the extent permitted by program. Site will accommodate initial calculated volume: Total Estimated Storage Volume = 4,621 gals Minimum Continuous Discharge Flow Rate = 1.1 gallons per minute	**Assumed for Base Bid**

SUSTAINABLE SITES CONTINUED									
SS 6.2 - Stormwater Management-Treatment				**1**	Design Builder	CD		Capture 0.5 inches of rainfall that falls on the 54,000 sf of impervious surface. (0.5 inches = 90% of the MAP for an arid region. (MAP less than 20 inches). This is equal to 17,000 gallon storage tank meets SS6.2criteria and exceeds local (Yolo County) requirements. See Site Plan	**Assumed for Platinum Alternate**
SS 7.1 - Heat Island Effect - Non-Roof			**1**		Design Builder	CD		Performance Requirements from LEED NC, V2.2: [Hardscape Area = +/- 12,000 sf] 50% of Asphalt will be shaded within 5 years/ Site Concrete meets SRI 35	**Assumed for Base Bid**
SS 7.2 - Heat Islands Effect - Roof		If green roofs are proposed, irrigate with reclaimed process water or greywater.	**1**		Design Builder	CD		Performance Requirements from LEED NC, V2.2: 50% of roof areas (> 16,000 sf) meet SRI criteria82 for Coated Metal roofs. Note that entire roof area can meet this requirement.	**Assumed for Base Bid**
SS 8 - Light Pollution Reduction - Exterior Lighting			**1**		Design Builder	CD		Interior Lighting controls and exterior light fixture characteristics and power densities will be met. Design Builder will confirm appropriate IESNA Zone classification with UC Davis in DD.	**Assumed for Base Bid**
Labs21 SS 9.1 - Safety and Risk Management - Air Effluent		Meet all standards and generally accepted guidelines for outdoor protection of workers and general public from airborne chemical, radioactive and biological hazards. Use mathematical modeling, physical modeling and/or post-construction testing and certification to prove compliance. Use effluent controls that minimize generation of waste subject to special regulations.	**yes**		Design Builder	DD, CD	Copy of wind tunnel study	Wind wake analysis by UC Davis campus test facilities will model air discharge from chemical fume hoods.	**Assumed for Base Bid**
Labs21 SS 9.2 - Safety & Risk Management - Water Effluent		Prevent releases of hazardous chemicals and other pollutants to sanitary sewer, using containment and engineering controls.		**tbd**	University/ Design Builder	CD	Copy of campus lab waste policy	Water Effluent from the winery, brewery and general food processing areas is collected and treated in a waste neutralization system. (30-gpm maximum flow) The system includes safety showers, floor sinks, waste piping, and a waste sampling station.	**TBD**
Additional measure				**yes**	Design Builder	SD		Trees in windbreak plantings capture particulate air pollution and shade building to reduce envelope loads	**Assumed for Base Bid**
		SUSTAINABLE SITES SUBTOTAL:	**7**	**3**	**TOTAL CREDITS THIS CATEGORY**				**10**

WATER EFFICIENCY									
Item:		**Description** - from LEED for New Construction Version 2.2 unless otherwise noted or modified below.	Required Points	Adopted Points	LEED Documentation	Phase when documentation is provided	Documentation Notes	Approach/ Project Application	Status
Labs21 WE Prerequisite 1 - Equipment Water Use		No domestic water shall be used “once-through” for any equipment, unless it is needed as direct contact process water.	**yes**		University	SD	University letter	No once-through domestic water (non-process) will be added by the Design Builders scope.	**Assumed for Base Bid**
WE 1.1 - Water Efficient Landscaping-Reduce by 50%			**1**		Design Builder	CD		Plant materials are restricted to low-water use, native/ adapted vegetation and shade trees. Other non-paved areas are DG/ no-water use. Projected irrigation demand for July (+/- 32,482 gallons) exceeds 50% reduction from the baseline case for site landscape area.	**Assumed for Base Bid**
WE 1.2 - Water Efficient Landscaping-No Potable Use or No Irrigation				**1**	Design Builder			Total annual irrigation water supply is provided from reclaimed water: a 125,000 gallon Process Water Tank and the 17,000 gallon Stormwater Tank provided for Credit SS6.2. See Site Plan and Illustrations	**Assumed for Platinum Alternate**
WE 2 - Innovative Wastewater Technologies				**1**	Design Builder			See Credit WE 1.2 above. Re-use of treated water for irrigation or greywater system for toilets is included in the LEED Platinum Checklist.	**Assumed for Platinum Alternate**
WE 3.1 and 3.2 - Water Use Reduction-30% Reduction			**2**		Design Builder	CD		Ultra-low flow fixtures and automatic shutoff controls are provided to meet 30% Reduction.	**Assumed for Base Bid**
Labs21 WE 4.1 - Process Water Efficiency		Calculate and document baseline of annual process water use and process wastewater generation. Install water meters to measure process water use.		**tbd**	University/ Design Builder	CD, W	University survey, metering	Metering for rooms identified in the Program Requirements is included in the LEED Platinum Checklist.	**TBD**
Labs21 WE 4.2 - Process Water Efficiency		Adopt technologies and strategies to reduce process water use and process wastewater generation by 20%. Document the reductions from baseline.		**tbd**	University/ Design Builder	CD, W	Design Strategies in SD, Survey and Metering in W	Clean-in-place system for the winery is included in the LEED Platinum Checklist.	**TBD**
Additional Measure		Capture and store rainwater for purified water feedstock		**tbd**	Design Builder	SD		Storage tanks, filtration, pumps and piping as required (including Program Requirements for manifolding rain water leaders) is included in the LEED Platinum Checklist	**TBD**
		WATER EFFICIENCY SUBTOTAL:	**3**	**2**	**TOTAL CREDITS THIS CATEGORY**				**5**

ENERGY & ATMOSPHERE									
Item:		**Description** - from LEED for New Construction Version 2.2 unless otherwise noted or modified below.	**Required Points**	**Adopted Points**	**LEED Documentation**	**Phase when documentation is provided**	**Documentation Notes**	**Approach/ Project Application**	**Status**
EA Prerequisite 1 - Fundamental Commissioning of the Building Energy Systems			**yes**		University/ Design Builder	All	University commissioning protocol. Spec reference for Cx	Proposal includes LEED-based commissioning for projects less than 50,000 sf (HVAC&R, Lighting Controls, and Domestic Hot Water) and requirements for these UCD Facility Standards references: 22 08 00 Plumbing; 23 08 00 HVAC; and 26 08 00 Electrical	**Assumed for Base Bid**
EA Prerequisite 2 - Minimum Energy Performance			**yes**		University/ Design Builder	DD		Proposal will meet all ASHRAE/ IESNA 90.1-2004 measures for Envelope, HVAC, Water Heating and Lighting, following Prescriptive Compliance for these components.	**Assumed for Base Bid**
EA Prerequisite 3 - CFC Reduction in HVAC&R Equipment			**yes**		University/ Design Builder	DD, CD	University Utilities Letter on Central Plant	No equipment supplied by the Design Builder will use CFC refrigerants.	**Assumed for Base Bid**
Labs21 EA Prerequisite 2 - Assess Minimum Ventilation Requirements		Ventilation requirements shall be determined and documented by a team including: A/E Team, Lab Consultants, User Reps, Owner Facilities and EH&S Groups, Commissioning Authority, and CM.	**yes**		University/ Design Builder	SD	Document in SD	Ventilation requirements established by the program will be met for all areas.	**Assumed for Base Bid**
EA Credit 1 - Optimize Energy Performance			**7**		Design Builder	DD		Compliance is achieved through the integrated design process described in the introduction to this section.	**Assumed for Base Bid**
EA 2.1 - 2.5% On-Site Renewable Energy				**1**	Design Builder	CD		Roof-mounted Photo-voltaic system: **13W/ sf PV** panels are provided to meet this requirement.	**Assumed for Platinum Alternate**
EA 2.2 - 7.5% On-Site Renewable Energy				**1**	Design Builder	CD		Roof-mounted Photo-voltaic system: **13W/ sf PV** panels are provided to meet this requirement.	**Assumed for Platinum Alternate**
EA 2.3 - 12.5% On-Site Renewable Energy				**1**	Design Builder	CD		Roof-mounted Photo-voltaic system: **13W/ sf PV** panels are provided to meet this requirement. See Roof Plan Diagram for panel locations.	**Assumed for Platinum Alternate**
EA 3 - Enhanced Commissioning			**1**		University/ Design Builder	All	University commissioning protocol. Spec reference for Cx	UC Davis will retain an independent commissioning authority (CxA) before start of CD phase.	**Assumed- 3rd party CxA will be retained during DD**
EA 4 - Enhanced Refrigerant Management				**1**	University/ Design Builder	CD	University central plant report	University will verify compliance of campus chilled water system/ Design Build team will specify/ maintain compliance for new equipment	**Assumed for Base Bid**

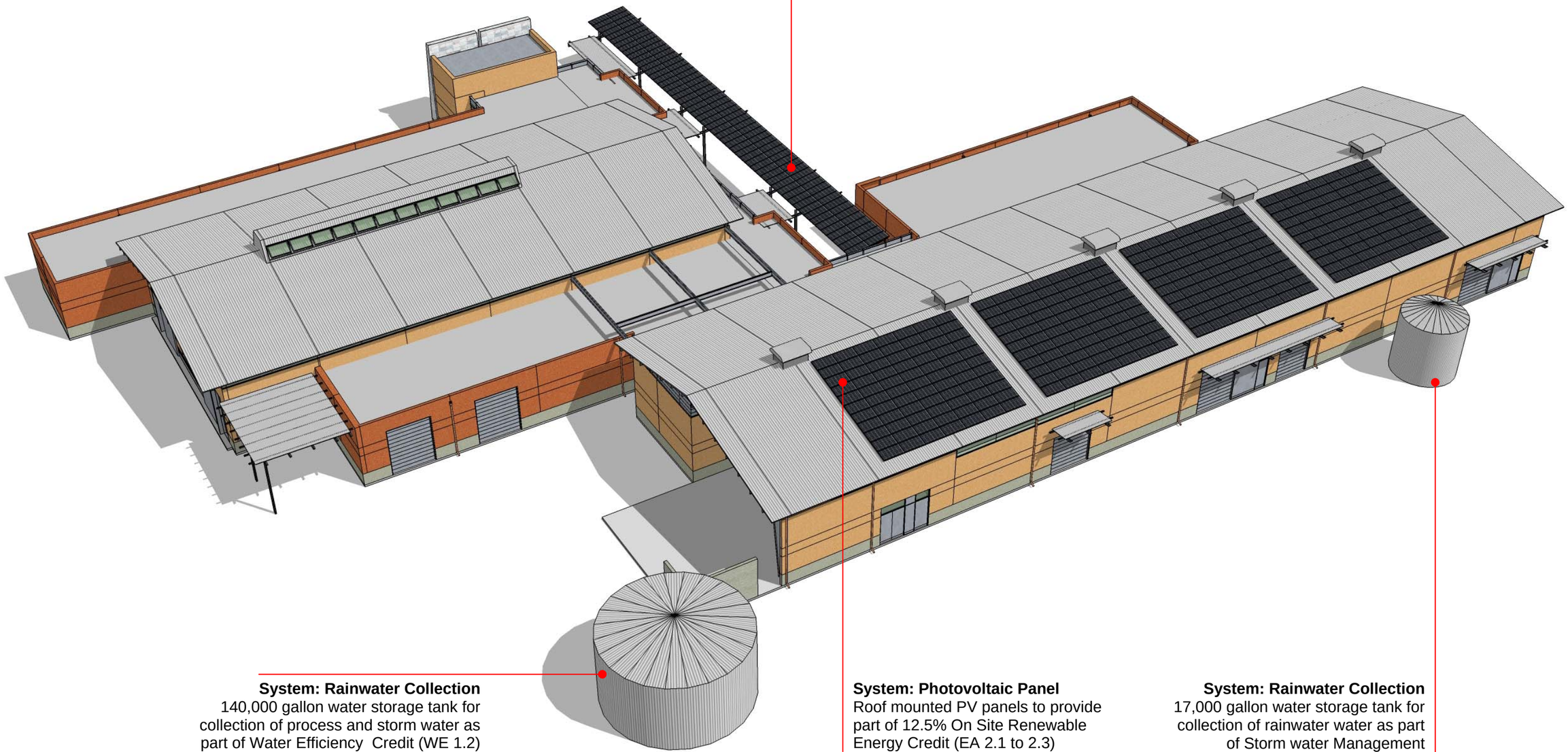
ENERGY & ATMOSPHERE CONTINUED									
EA 5 - Measurement and Verification			**1**		University	CA	Reference plans	University will provide IPMVP Measurement and Verification	**Assumed for Base Bid**
EA 6 - Green Power				**1**	University	CA	Summary letter of potential to negotiate power agreement	Recommended credit to be undertaken by UC Davis. Included as an assumption for Platinum alternate	**Assumed Credit for this Proposal**
Labs21 EA 8 - Improve Equipment Efficiency		Energy Star™ compliant/ or equipment in the top 25th percentile for at least 75 percent of new Class 1 and Class 2 equipment and at least 30 percent of all Class 1 and Class 2 equipment. Acceptance of equipment in the 25th percentile requires a minimum of 4 different models that meet the functional needs of the research. If only 2 or 3 functionally equivalent models are available, acceptance requires selection of the most energy efficient model.		**yes**	University	DD, CA	Reference equipment selection data	Most significant equipment purchase/ installation is through UCD. Compliance is assumed, based on "University" responsibility for LEED Documentation. - Equipment provided by Design Builder will comply with this standard.	**Assumed for Base Bid**
Labs21 EA 9.1 - Right-size Equipment Load		Measure base usage of equipment electrical loads in a comparable space for each functional type of laboratory space and design electrical and cooling systems based on these measurements.		**yes**	University	SD		This credit is not provided as part of Design Builder's Base bid / assumed to be provided by UC Davis.	**Assumed for Base Bid**
Labs21 EA 9.2 - Right-size Equipment Load - Metering		Design electrical distribution system to provide for portable check metering of equipment electric consumption. Design for safe access to electrical feeder enclosures and provide sufficient space to attach clamp-on or split core current transformers.	**yes**		Design Builder	CD	Reference Single Line Diagram	Diagram will be developed in DD to describe check metering process.	**Assumed for Base Bid**
		ENERGY & ATMOSPHERE SUBTOTAL:	**9**	**5**	**TOTAL CREDITS THIS CATEGORY**				**14**

MATERIALS & RESOURCES									
Item:		**Description** - from LEED for New Construction Version 2.2 unless otherwise noted or modified below.	**Required Points**	**Adopted Points**	**LEED Documentation**	**Phase when documentation is provided**	**Documentation Notes**	**Approach/ Project Application**	**Status**
MR Prerequisite 1 - Storage & Collection of Recyclables			**yes**		Design Builder	CD		Both interior area and adjacent exterior area in the Service Yard are dedicated to recyclable collection.	**Assumed for Base Bid**
Labs21 MR Prerequisite 2 - Hazardous Material Handling		Develop a system to maintain current information about hazardous material types, quantity, location, and disposal/use histories, and deliver information to a central location.	**yes**		University	SD	Sample Chem Management System Sheet	None - University will provide.	**Compliance is assumed by University**
MR 1.1- 1.3 Building Re-use				**0**	NA			No existing construction	**Not provided**
MR 2.1 and 2.2 - Construction Waste Management- Divert 75% From Landfill			**2**		Design Builder	CD, CA		Note: Davis Waste Removal can only guarantee 50% Diversion. (1 Credit) Meeting the 75% target requires contracting with separate vendor.	**Assumed for Base Bid**
MR 3.1 - Resource Reuse: 5%				**0**	NA	CD		Program/ material requirements limit re-used construction materials in the quantity needed (+5% value).	**Not provided**
MR 3.2 - Resource Reuse- 10%				**0**	NA			Program/ material requirements limit re-used construction materials in the quantity needed (+10% value).	**Not provided**
MR 4.1 - Recycled Content: 10% (post-consumer + ½ pre-consumer)				**1**	Design Builder	CD, CA		Recycled Content Value significantly exceeds 10% of Total Materials Cost, calculated as 45% of total.	**Assumed for Base Bid**
MR 4.2 - Recycled Content: 20% (post-consumer + ½ pre-consumer)				**1**	Design Builder	CD, CA		Recycled Content Value does not meet 20% of Total Materials Cost, calculated as 45% of total.	**Assumed for Platinum Alternate**
MR 5.1 - Regional Materials- 10% Extracted, Processed & Manufactured Regionally				**1**	Design Builder	CD, CA		Regional Materials Value exceeds 10% of Total Materials Cost, calculated as 45% of total.	**Assumed for Base Bid**
MR 5.2 - Regional Materials- 20% Extracted, Processed & Manufactured Regionally				**1**	Design Builder	CD, CA		Program/ material requirements limit application of this criterion- will be re-evaluated in DD	**Assumed for Platinum Alternate**
MR 6 - Rapidly Renewable Materials				**0**	Design Builder	CD, CA		Program/ material requirements limit application of this criterion.	**Not provided**
MR 7 - Certified Wood				**1**	Design Builder	CD, CA		50% of wood-based products Wood (not permitted in process areas) will be FSC.	**Assumed for Base Bid**
Labs21 MR 8 - Chemical Resource Management		Develop an action plan to eliminate, minimize, substitute, recycle, and dispose of harmful chemicals safely. Plan should improve distribution, and limit quantities, storage and waste.		**yes**	University	CD	Reference Plan		**Compliance is assumed by University**
		MATERIALS & RESOURCES SUBTOTAL:	**2**	**5**	**TOTAL CREDITS THIS CATEGORY**				**7**

INDOOR ENVIRONMENTAL QUALITY									
Item:		**Description** - from LEED for New Construction Version 2.2 unless otherwise noted or modified below.	**Required Points**	**Adopted Points**	**LEED Documentation**	**Phase when documentation is provided**	**Documentation Notes**	**Approach / Project Application**	**Status**
IEQ Prerequisite 1 - Minimum IAQ Performance			**yes**		Design Builder	CD	Reference Drawings	See Performance Requirements.	**Assumed for Base Bid**
IEQ Prerequisite 2 - Environmental Tobacco Smoke (ETS) Control			**yes**		University		Copy of University Policy	None - University will provide.	**Compliance is Assumed by university**
Labs21 IEQ Prerequisite 3 - Laboratory Ventilation		Meet the minimum requirements of ANSI Z9.5 (latest version).	**yes**		Design Builder	CD	Reference Drawings	Performance Requirements will be me subject to the passive ventilation features used elsewhere in the building.	**Assumed for Base Bid**
Labs21 IEQ Prerequisite 4 - Exterior Door Notification System		Provide an explicit notification system for all doors leading directly from pressure-controlled laboratory spaces to the outside.	**yes**		Design Builder	CD	Reference Drawings	No Lab Doors lead directly to the exterior	**Assumed for Base Bid**
IEQ 1 - Outdoor Air Delivery Monitoring			**1**		Design Builder	CD		Co2 monitors provided in the densely occupied areas (classrooms).	**Assumed for Base Bid**
IEQ 2 - Ventilation Effectiveness			**1**		Design Builder	CD		Ventilation model will be prepared in DD to depict the diagrams and calculations needed for this credit.	**Assumed for Base Bid**
IEQ 3.1 - Construction IAQ Management Plan- During Construction			**1**		Design Builder	CA		Design Builder will follow all procedures required to maintain site conditions and protection of materials and systems.	**Assumed for Base Bid**
IEQ 3.2 - Construction IAQ Management Plan- After Construction			**1**		Design Builder	CA, W		Design Builder will provide Option 1 Flush-out procedure. See Specifications.	**Assumed for Base Bid**
IEQ 4.1 - Low-Emitting Materials- Adhesives & Sealants			**1**		Design Builder	CD		Design Builder will identify products and prepare performance specifications.	**Assumed for Base Bid**
IEQ 4.2 - Low-Emitting Materials- Paints and Coatings			**1**		Design Builder	CD		Design Builder will identify products and prepare performance specifications.	**Assumed for Base Bid**
IEQ 4.3 - Low-Emitting Materials- Carpet				**1**	NA	CD. CA		Carpet Tile (not allowed by current program) can be re- evaluated for Offices and Classrooms	**Assumed for Platinum Alternate**
IEQ 4.4 - Low Emitting Materials- Composite Wood and Agrifiber Products			**1**		Design Builder	CD. CA		Design Builder will identify products and prepare performance specifications.	**Assumed for Base Bid**
IEQ 5 - Indoor Chemical & Pollutant Source Control			**1**		Design Builder	CD		Permanent walk-off mats at regular entry points, exhaust requirements and MERV 13 filtration are provided.	**Assumed for Base Bid**
IEQ 6.1 - Controllability of Systems- Lighting			**1**		Design Builder	CD		Performed through use of lighting control panel, occupancy sensors, dual switching and photosensors.	**Assumed for Base Bid**
IEQ 6.2 - Controllability of Systems- Temperature and Ventilation			**1**		Design Builder	CD		Controls as required are provided for occupied areas.	**Assumed for Base Bid**
IEQ 7.1 - Thermal Comfort- Design			**1**		Design Builder	CD		Appropriate zones have been established to achieve this credit.	**Assumed for Base Bid**

INDOOR ENVIRONMENTAL QUALITY CONTINUED									
IEQ 7.2 - Thermal Comfort- Monitoring			**1**		Design Builder	W		Thermal comfort survey will be conducted to address requirements for this credit, undertaken in conjunction with post-occupancy evaluation. (see proposed innovation credits)	**Assumed for Base Bid**
IEQ 8.1 - Daylight and Views- Daylight 75% of Spaces				**1**	Design Builder	DD		Perimeter glazing and tubular skylight system provide daylight. Option 2 (Daylight simulation modeling) will confirm compliance with this credit. Exemplary performance will be confirmed at DD phase.	**Assumed for Base Bid**
IEQ 8.2 - Daylight and Views- Views for 90% of Spaces				**1**	Design Builder	DD		All regularly occupied areas enjoy direct connection to views through perimeter or interior glazing. 90% confirmation will demonstrated in DD phase.	**Assumed for Base Bid**
Labs21 IEQ 9.1 - Indoor Environmental Safety		Design laboratories to ensure contaminants are contained and workers are protected. Optimize indoor airflow based on results of computational fluid dynamics (CFD) or physical modeling.		**yes**	Design Builder	DD, CD	Provide Report	Fume hood locations, zoning and characteristics will comply with this requirement.	**Assumed for Base Bid**
Labs21 IEQ 9.2 - Indoor Environmental Safety		Design laboratories to ensure contaminants are contained and workers are protected. Conduct fume hood commissioning that includes ASHRAE-110 Method of Testing Performance of Laboratory Fume Hoods as installed.		**yes**	University/ Design Builder	W	Cx Report	Design Builder will adhere to these standards, with performance testing of the fume hoods.	**Assumed for Base Bid**
Labs21 IEQ 9.3 - Indoor Environmental Safety		Design laboratories to ensure contaminants are contained and workers are protected. Design all alarm systems in the laboratory to be inherently self-identifying and failsafe.		**yes**	Design Builder	CA	Reference Drawings	Alarm systems will be provided to meet this criterion.	**Assumed for Base Bid**
		INDOOR ENVIRONMENTAL QUALITY SUBTOTAL:	**12**	**3**	**TOTAL CREDITS THIS CATEGORY**				**15**

INNOVATION IN DESIGN									
Item:		**Description** - from LEED for New Construction Version 2.2 unless otherwise noted or modified below.	**Required Points**	**Adopted Points**	**LEED Documentation**	**Phase when documentation is provided**	**Documentation Notes**	**Approach/ Project Application**	**Item:**
ID 1.1 - Innovation in Design		Organic Landscaping / Integrated Pest Management Program: "Implement strategies that are considered safer than synthetic chemical controls and eliminate or reduce the use of herbicides and fertilizers and implementing xeriscape principles."		**1**	University/ Design Builder	All	Provide narrative	Recognized innovation from USGBC "Innovation in Design Credit Catalog"	**Assumed for Base Bid**
ID 1.2 - Innovation in Design		Construct Full scale mock-up: "Optimize materials use and reduce overall construction waste, improve efficiency during construction and fit out of the final spaces and compress Building schedule."		**1**	Design Builder	All	Provide narrative	Recognized innovation from USGBC "Innovation in Design Credit Catalog"	**Assumed for Base Bid**
ID 1.3 - Innovation in Design		Substantially exceed LEED performance credit SS 7.2 - Heat Islands Effect: 100% of roof area will meet this criterion.		**1**	Design Builder	All	Provide calculations	Clear performance metrics and significant area increase (x2)	**Assumed for Base Bid**
ID 1.4 - Innovation in Design		Conduct Post Occupancy Survey: "Assess overall building user satisfaction over time by addressing: thermal comfort, general satisfaction, layout, furnishings, air quality, lighting, acoustic quality and cleanliness."		**1**	Design Builder	All	Provide narrative	Recognized innovation from USGBC "Innovation in Design Credit Catalog"	**Assumed for Base Bid**
ID 1.5 - Innovation in Design		Alternative water treatment systems		**1**	Design Builder	All	Provide calculations	"Dolphin" type treatment for recovered site and process water	**Assumed for Platinum Alternate**
ID 2 - LEED Accredited Professional			**1**		Design Builder	SD	Provide LEED AP name, role and company.	Design Build Team: Contractor, Architect, Landscape Architect, and Engineers are LEED APs.	**Assumed for Base Bid**
		INNOVATION IN DESIGN SUBTOTAL:	**1**	**4**	**TOTAL CREDITS THIS CATEGORY**				**5**
		TOTAL REQUIRED POINTS FOR BASE BID:	**34**		**TOTAL CREDITS INCLUDED FOR PLATINUM ALTERNATE**				**56**
		Additional Points:		**22**					



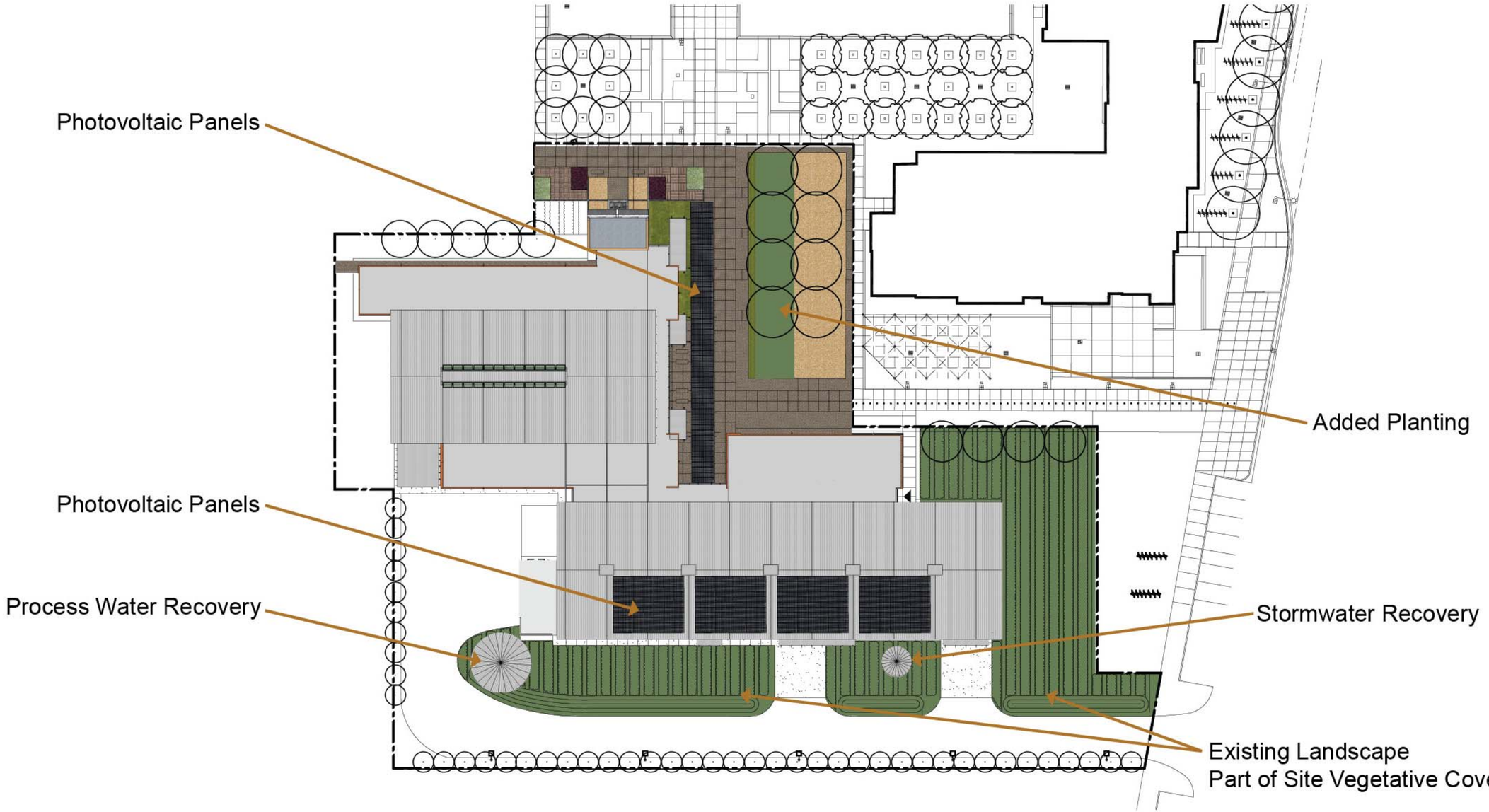
System: Photovoltaic Panel
Utilize PV panels as screen for entry canopy providing part of 12.5% On Site Renewable Energy Credit (EA 2.1 to 2.3)

System: Rainwater Collection
140,000 gallon water storage tank for collection of process and storm water as part of Water Efficiency Credit (WE 1.2)

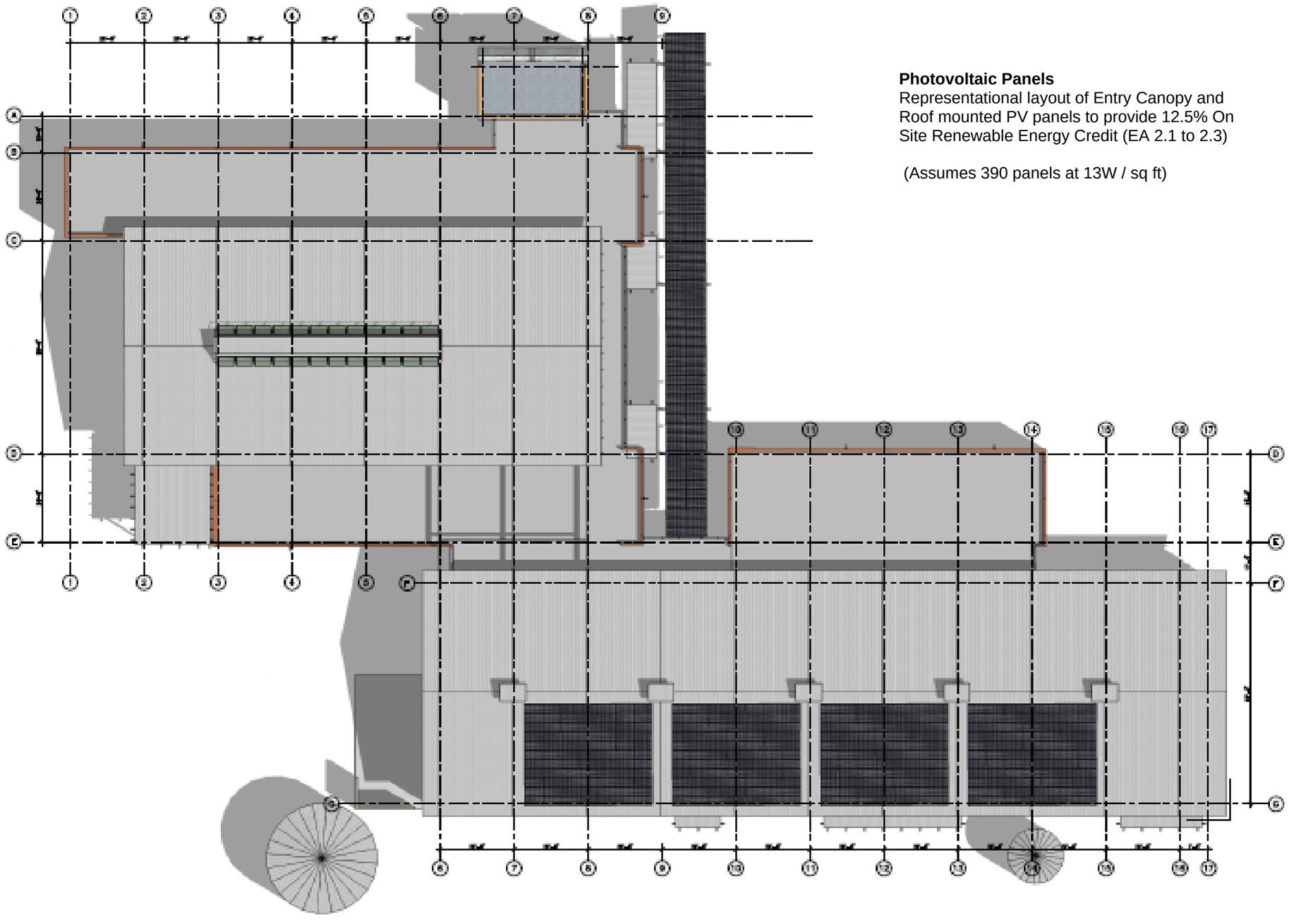
System: Photovoltaic Panel
Roof mounted PV panels to provide part of 12.5% On Site Renewable Energy Credit (EA 2.1 to 2.3)

System: Rainwater Collection
17,000 gallon water storage tank for collection of rainwater water as part of Storm water Management Treatment Credit (SS 6.2)

LEED® Platinum Overview



LEED® Platinum - Site Approach



Photovoltaic Panels
Representational layout of Entry Canopy and Roof mounted PV panels to provide 12.5% On Site Renewable Energy Credit (EA 2.1 to 2.3)

(Assumes 390 panels at 13W / sq ft)

LEED® Platinum Renewal Energy (EA 2.3)

building GENERATED

	January	February	March	April	May	June	July	August	September	October	November	December
1. 2. Process Water	5,760 g	900 g	900 g	5,760 g	900 g	900 g	5,760 g	900 g	47,520 g	900 g	900 g	900 g
Domestic Water	9,000 g	9,000 g	8,000 g	9,000 g	7,000 g	4,500 g	4,500 g	7,000 g	10,000 g	12,000 g	11,000 g	9,000 g

nature GENERATED

	January	February	March	April	May	June	July	August	September	October	November	December
3. 4. Stormwater	67,750 g	87,262 g	5,420 g	57,994 g	11,924 g	0 g	0 g	0 g	6,504 g	45,528 g	28,184 g	95,934 g

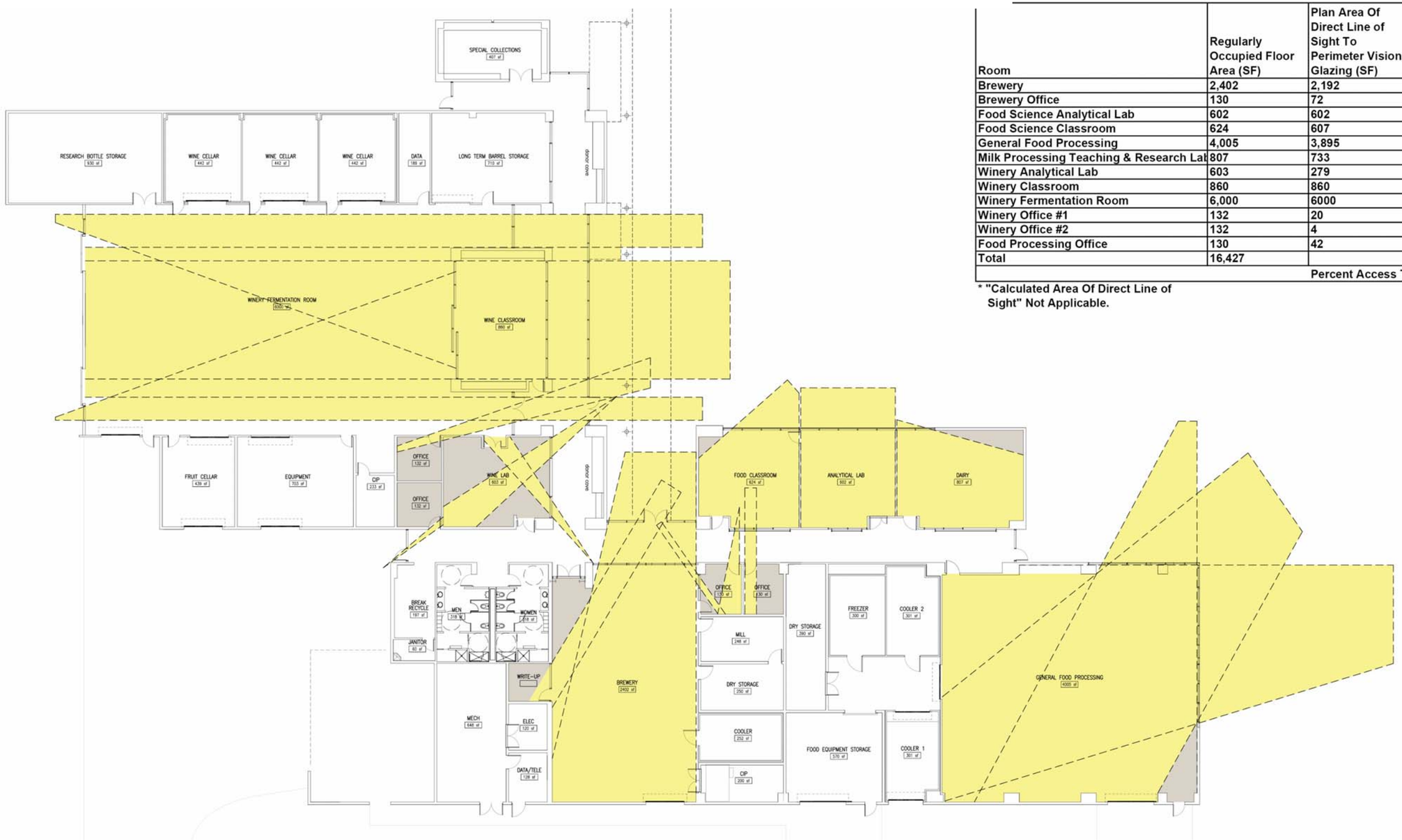
Water REUSE

	January	February	March	April	May	June	July	August	September	October	November	December
Landscape Irrigation	3,262 g	5,701 g	11,105 g	18,025 g	22,704 g	26,757 g	27,977 g	24,648 g	19,079 g	13,972 g	6,722 g	3,822 g
Vineyard Irrigation			FUTURE VINEYARD DEMAND TO BE ADDED IN DESIGN DEVELOPMENT									
Toilets	3,300 g	3,300 g	2,500 g	3,300 g	2,000 g	1,650 g	1,650 g	2,000 g	5,000 g	6,000 g	6,000 g	3,300 g

Note:
1. Process water need based on 14 - 2000 L (528.3 gallon) fermentation tanks and 150 - 50 gallon teaching tanks. With assumed industry average of six gallons of process water needed to produce one gallon of finished wine. Resulting in a need for 90,000 gallons of process water required before innovation. With consumption innovation assumed to reduce need by 20% resulting required process water is 72,000 gallons needed for UC Davis wine production.
2. Process water annual consumption break down based on 65% of process water used in crush month, 8% used in racking months and 1.25% used in non-racking / non-crush months.
3. Stormwater accumulation based on gallons per square foot collected on building roofscape and hardscape (total 54,200 gsf).
4. Stormwater precipitation based on California Department of Water Resources monthly rainfall index for May 2007 thru February 2008

LEED® Platinum Water Efficiency Calculations

Indoor Environmental Quality 8.2: Views for 90% of Spaces
(This Base Bid condition is maintained for Platinum Alternate)

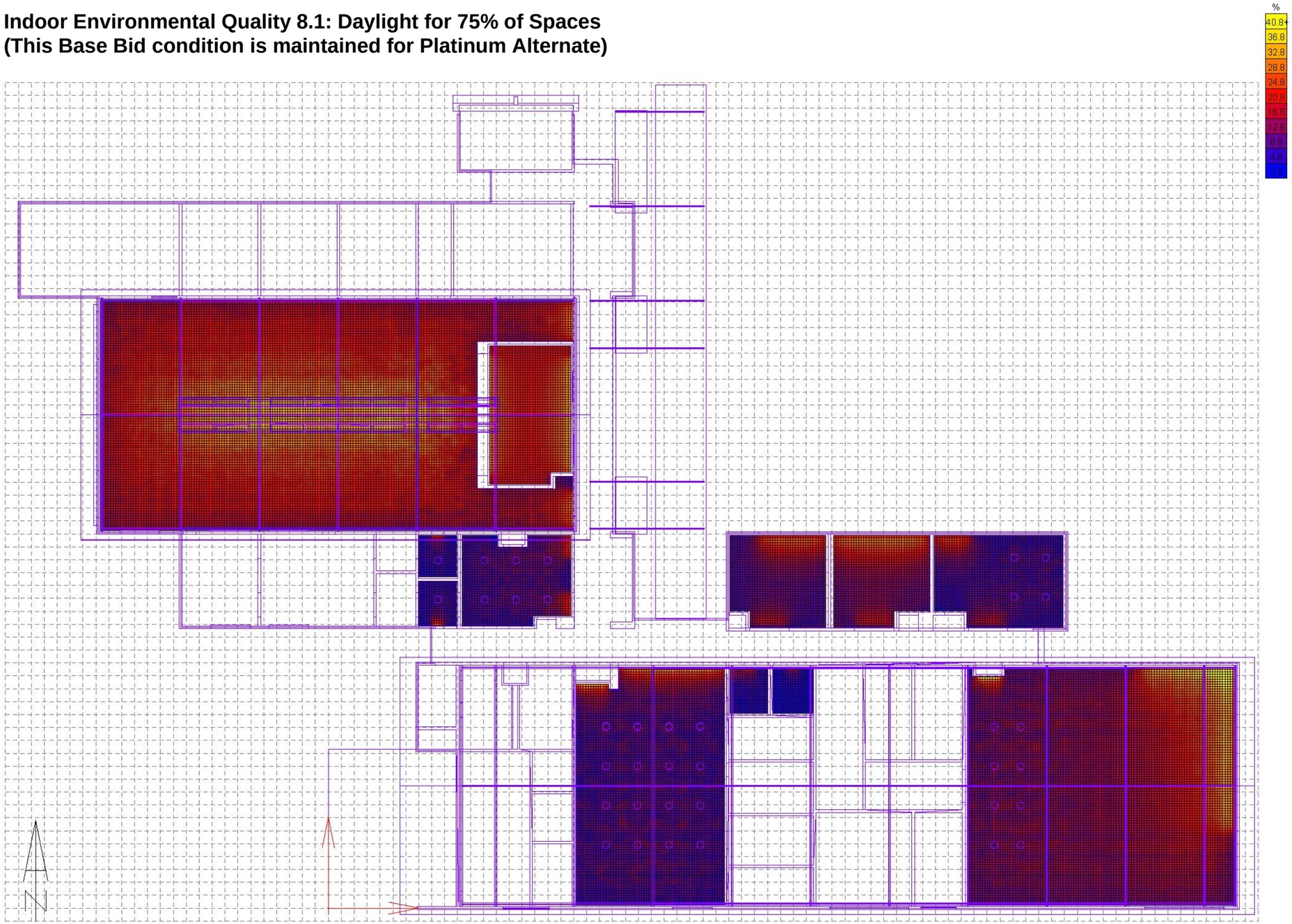


Room	Regularly Occupied Floor Area (SF)	Plan Area Of Direct Line of Sight To Perimeter Vision Glazing (SF)	Horizontal View at 42 inches (yes/no)	Compliant Area (SF)
Brewery	2,402	2,192	Yes	2,192
Brewery Office	130	72	Yes	72
Food Science Analytical Lab	602	602	Yes	602
Food Science Classroom	624	607	Yes	607
General Food Processing	4,005	3,895	Yes	3,895
Milk Processing Teaching & Research Lab	807	733	Yes	733
Winery Analytical Lab	603	279	Yes	279
Winery Classroom	860	860	Yes	860
Winery Fermentation Room	6,000	6000	Yes	6000
Winery Office #1	132	20	Yes	20
Winery Office #2	132	4	Yes	4
Food Processing Office	130	42	Yes	42
Total	16,427			15,306
		Percent Access To Views: (15,306/16,427) 93.1%		

* "Calculated Area Of Direct Line of Sight" Not Applicable.

LEED® Support Materials – Interior Views

Indoor Environmental Quality 8.1: Daylight for 75% of Spaces
(This Base Bid condition is maintained for Platinum Alternate)



LEED® Support Materials - Daylight

Beyond Platinum

Not covered by Platinum Alternate

The Base Bid identified optimal program relationships, achieving high efficiency essential to sustainability. Architectural expression respects context and maintains a level of quality consistent with the RMI buildings. This is a sustainable design fully integrated into an academic community.

The Platinum Alternate introduced site features and building systems to more completely address energy performance. Consistent with the Integrated Design process, these are incremental improvements that capitalize on the strength of the previous design.

“Beyond Platinum” as a category recognizes goals and interests that extend beyond the LEED certification process. While not covered by the Platinum Alternate cost proposal, these are key elements that have been identified as important by University reviewers, that have practical value, or that reflect our own interests in sustainable design.

Building Characteristics

Some building features or architectural characteristics are not strictly required to meet Platinum certification. These may however, contribute to overall performance and more clearly demonstrate sustainable characteristics. Green roofs and mass walls for example, were Identified by university representatives, as important contributors to building quality that may be consistent with the expectations of potential donors.

We have shown these potentials in the accompanying illustrations to demonstrate that the basic organization of the building retains a high degree of flexibility and to depict the inherent sculptural possibilities for the building.

Lab21 Criteria

The following criteria are taken from the University’s Checklist. While not required by performance goals or certification, these Labs21 criteria are regarded as good design practice.

Labs21 SS 9.2 - Safety & Risk Management - Water Effluent Is from the winery, brewery and general food processing areas is collected and treated in a waste neutralization system. (30-gpm maximum flow) The system would include safety showers, floor sinks, waste piping, and a waste sampling station.

Labs21 WE 4.1 - Process Water Efficiency. (“Calculate and document baseline of annual process water use and process wastewater generation. Install water meters to measure process water use.”) Winery process water requirements are anticipated to be in the vicinity of 90,000 gallons annual use. Reduction in water use is highly dependent on wine-making technique and research needs. Meters are provided at process areas to monitor water use.

Labs21 WE 4.1 - Process Water Efficiency (“Adopt technologies and strategies to reduce process water use and process wastewater generation by 20%. Document the reductions from baseline.”) Significant reduction is dependent on wine making technique/ research needs. Reduced quantity is assumed as an operating effort. Metering and sampling capability provided by this proposal.

Additional Measure - Capture and store rainwater for purified water feedstock. The platinum proposal includes capture and treatment of rainwater. Additional treatment to a specific purification level identified by users could be developed here.

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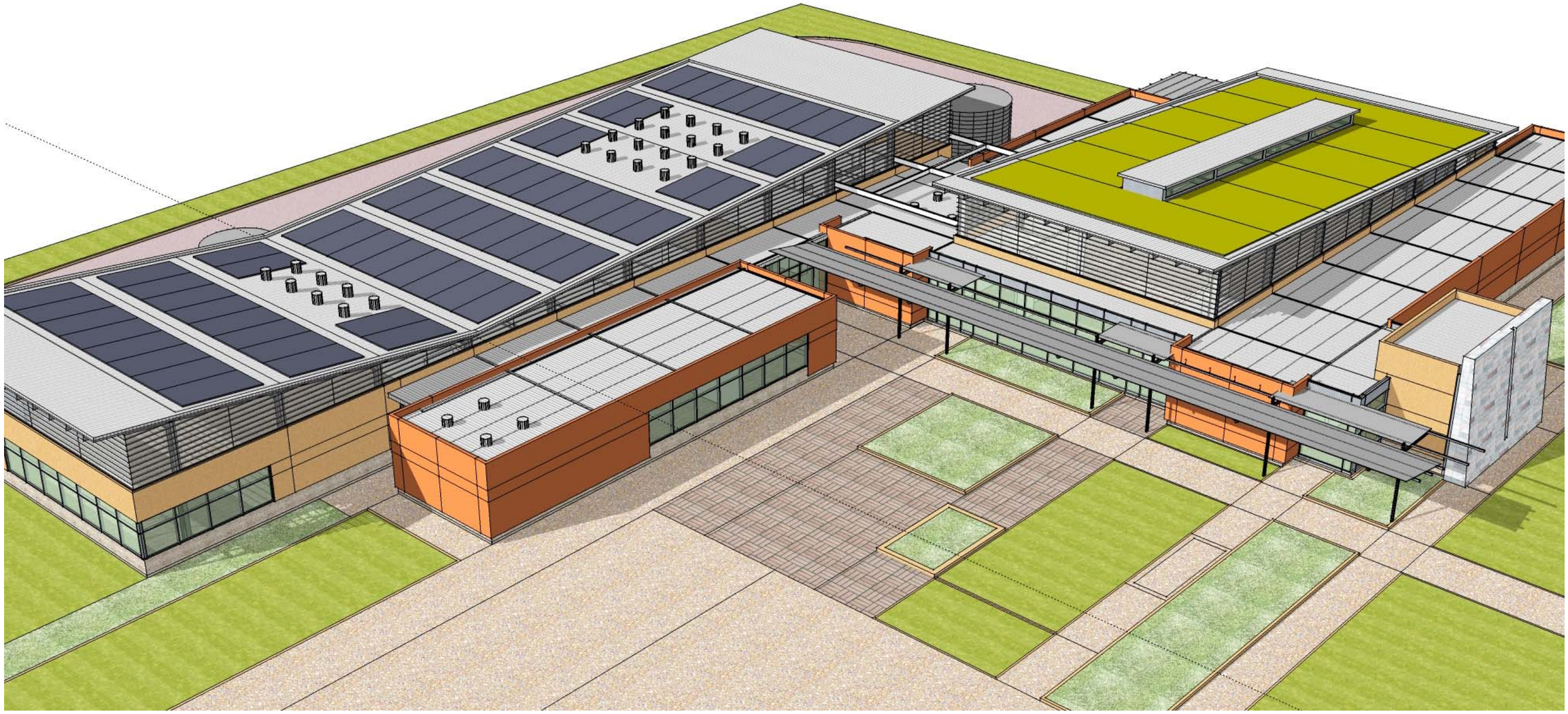
Innovations in Design

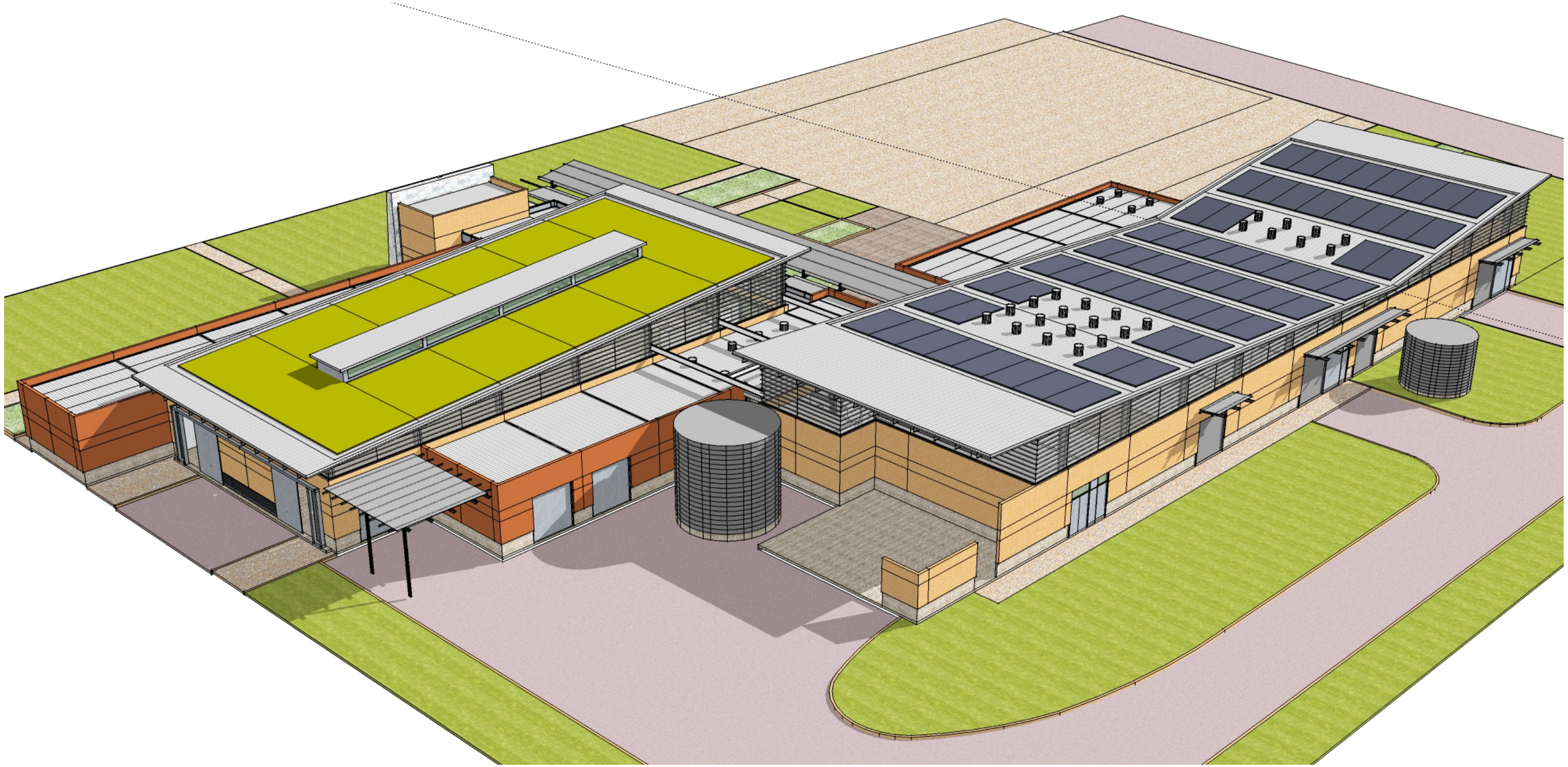
The Platinum Alternate identified proven innovations in order to make the best case for certification. An additional measure- CO2 Capture and Scrubber System- is highly recommended and would very likely be recognized as an innovation.

Heat Recovery System; Trombe Wall / High Thermal Mass; Ethanol Capture System – while recommended, are less likely to qualify as an innovations, but should also be regarded as good design practice.

Beyond LEED® Platinum - Overview

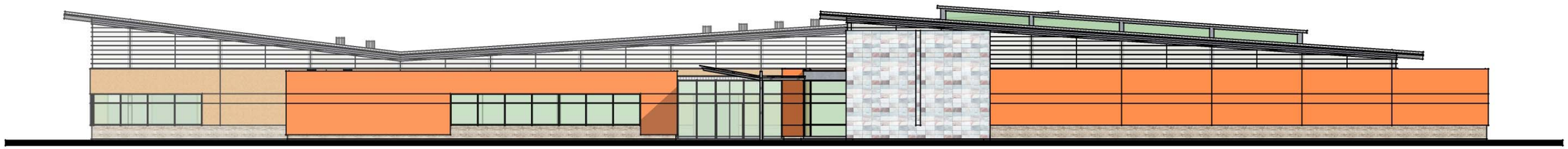


Beyond LEED® Platinum – North East Aerial

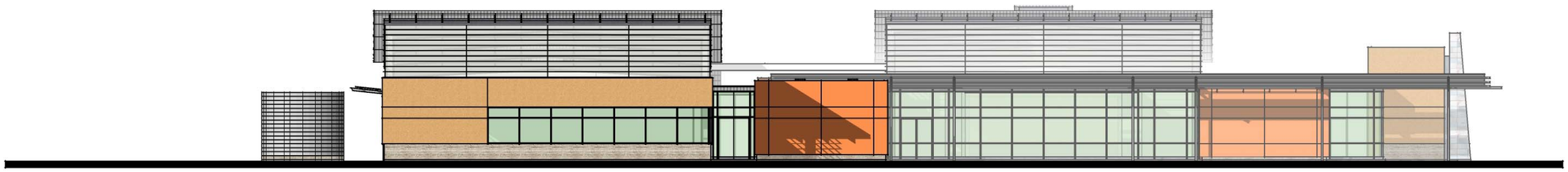


Beyond LEED® Platinum – South West Aerial

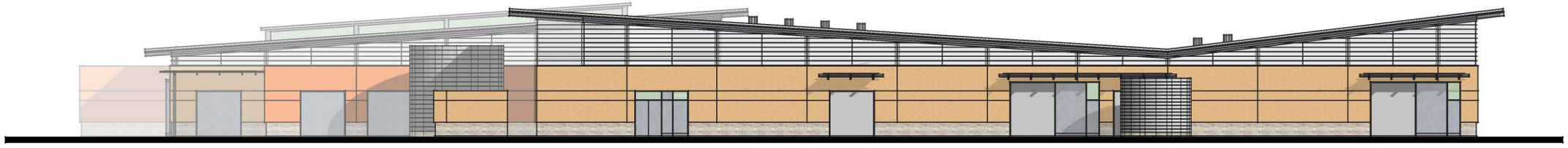
Beyond LEED® Platinum – Main Entry From RMI Courtyard



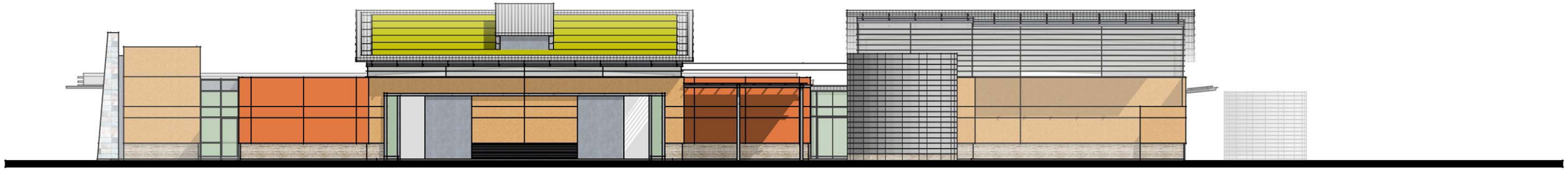
NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION

Beyond LEED® Platinum – Building Elevations