Marin Community College District
Science-Math-Central Plant Complex Project Overview
ED2 International

Board of Trustees Study Session
Tuesday, September 18, 2007
Current Site Development

- Front-of-House vs. Back-of-House?
- Service & Deliveries?
- Accessible on-grade (2 Floors) Barrier-Free Design
- Corte Madera Creek – 100 Yr. Flood Plain
- Noise Attenuation & Landscape Buffer of Cooling Tower & Mechanical Equipment with Adjoining Residential Community
- Native American Midden as Archeological Resource
- Fire Lane along Creek with underground utilities
Site Influence Diagram
SECTION AT CREEK PROMENADE

COLLEGE OF MARIN - KENTFIELD CAMPUS

SCALE 1/4" = 1'-0"
Science / Math / Central Plant Complex

Previous Concept

- Separate Lab & Non-Laboratory Structures
  - 4-Story Non-Lab Building Aligned with New Fine Arts Building with True North / South Orientation
  - 2-Story L-Shaped Lab Building Aligned Setbacks with Existing Buildings
  - 1-Story Green Roof Central Plant near Corte Madera Creek
  - Geothermal Field Parking Lot & New Bridge Approach to Campus
Science / Math / Central Plant Complex

Previous Concept

Study Physical Model – Detailed Project Program
Science / Math / Central Plant Complex

Site Strategies Diagram

1. Create connection to campus front door
2. Create connection to Harlan
3. Create connection to L.R.C.
4. Create connection to Student Union
5. Create connection to new gateway bridge southwest campus
6. Create connection to Fusseman Hall
7. Create connection to fine arts & performing arts
Key Planning Concepts

- **T-Shaped Plan**
  - Dialogue with Fine Arts
  - Offices & Classrooms w/ North-South Orientation
  - Setback Alignments
  - Landscape Buffering & Contextual Siting

- **On-grade Accessibility**
  - First & Second Floors
  - New Upper Redwood Quad Main Entry Shared with Fusselman Hall

- **Fire Lane Provisions**
  - Creekside Access & Upper Quad Turnaround

- **Minimize Site Impacts**
  - Arboretum Remediation
  - Bio-swale / Storm Drain / Green Roof Filtration
  - Heritage Trees Protection
  - Creek Preservation
Trees Preservation & Access
Express Spheres of Influence
- Arts/ Humanities/ Technology Connections
- Nature’s Overlapping Circles
  - South Oval Arrival Plaza
  - Molecule Entry Plaza
  - East Orbit Plaza
Sculpture Rain Gardens
Educational Opportunities
- Earthsmart / Eco-Literacy
  Themed Exhibits & Displays
  - Axiom Garden
  - Seed Garden
  - Cellular Court
  - Element Court
  - Usable Green Roofs
  - Rooftop Telescope Terrace
Mathematics / History & Information Technology

Molecular Biology

Chemistry / Plants / Animals / Geology

Astronomy / Physical Sciences

Nursing & Life Sciences
Site Section B-B
Science / Math / Central Plant Complex

Watercolor Rendering – Orbit Plaza Upper Level Main Entrance
Shaping Spaces / Making Places

- **Terrace Massing**
  - One-story Elements Sited Back from Laurel Avenue Nearest Residences
  - Stepping Offices & Classrooms with Landform

- **Arrival Plaza & Gateway**
  - To & From Geothermal Field Parking Lot 9 & New Bridge over Creek

- **Sunlit Usable Open Spaces**
  - Outdoor Interactive Spaces
  - Integrated Natural & Built Landscape & Hardscape
  - Green Roofs

- **Modular / Flexible Lab Wings**
  - Vertical Mech. Distribution
  - Sun Shades/Light Shelves
  - Sustainable Cladding
  - Low - Emissivity Glazing
  - Rooftop Sight Screening
Science / Math / Central Plant Complex

- Laboratories
- Lab Support
- Classroom
- Office / Office Support
- Building Services
- Indoor Circulation
- Green Roofs

Organization & Stacking

By Function Use
Science / Math / Central Plant Complex

Physical Sciences
Life & Earth Sciences
Non-Department
Central Plant
Info. Tech. Center
Mathematics
Indoor Circulation
Nursing

Organization & Stacking
By Scientific Discipline

1  2  3  R
Program Components:

- Physical Sciences
- Life & Earth Sciences
- Non-Department
- Central Plant
- Data Center
- Mathematics
- Indoor Circulation

Labs & Service Support

- NW Central Utility Plant
- West Info. Tech. Center
- Center Wing – EW Axis
- Math / Museum Service Core
- North Lab Wing – NS Axis
- South Lab Wing – NS Axis
- South Dual Tower Gateway

Organization & Stacking

- Kentfield, CA
- ED2 international

Program-Appropriate
Program Components:
- Physical Sciences
- Life & Earth Sciences
- Non-Dept Classrooms
- Nursing
- Green Roofs
- Indoor Circulation

Labs & Classrooms:
- West & North Green Roofs
- East 2\textsuperscript{nd} Floor Main Entrance
- Central Classroom Wing & Utility/ Service Core
- North Nursing Wing
- South Anatomy & Chemistry Lab Wing
Organization & Stacking

Program Components:
- Non-Dept. Offices
- Green Roofs
- Indoor Circulation

Office Floor:
- South & West Facing Green Roofs
- East Office Suite
- Open Office Landscape
- North & South Exterior Full-Time Faculty Offices
- Conference & Staff Room with Mt. Tam Views
- Equipment Sight Screens
Program Components:
- Non-Dept. Offices
- Green Roofs
- Indoor Circulation

Telescope Terrace
- Astronomy East Platform
- Telescope Storage
- Elevator
- Access Stairs
- Equipment Sight Screens
Pedestrian Views

(E) Pedestrian View # 1 – Laurel Ave. & ITC

(N) Pedestrian View # 1 – Laurel Ave. & ITC
Pedestrian Views

Science/ Math/ Central Plant Complex

(E) Pedestrian View # 5 – Laurel Ave. & Lot 4

(N) Pedestrian View # 5 – Laurel Ave. & Lot 4
Scientific/ Math/ Central Plant Complex

Pedestrian Views

(E) Pedestrian View # 7 – from Performing Arts

(N) Pedestrian View # 7 – from Performing Arts
Pedestrian Views

(E) Pedestrian View #8 – Top of Ramp

(N) Pedestrian View #8 – Top of Ramp
Science/ Math/ Central Plant Complex

Pedestrian Views

(E) Pedestrian View # 9 – Under Sequoia Trees

(N) Pedestrian View # 9 – Under Sequoia Trees
Science/ Math/ Central Plant Complex

Pedestrian Views

(E) Pedestrian View # 10 – from Student Union

(N) Pedestrian View # 10 – from Student Union
Science/ Math/ Central Plant Complex

Pedestrian Views

(E) Pedestrian View # 11 - from Molecule Plaza
(N) Pedestrian View # 11 - from Molecule Plaza
Science / Math / Central Plant Complex

3-D CADD Modeling
Science/ Math/ Central Plant Complex

Pedestrian Views

(E) Pedestrian View # 12 – from West Bridge

(N) Pedestrian View # 12 – from West Bridge
Four Levels of LEED™ Certification

- **Platinum**
  52 - 69 points

- **Gold**
  39 – 51 points

- **Silver**
  33 – 38 points

- **LEED™ Certified**
  26 – 32 points

DAVIS LANGDON
LEED™ CERTIFIER
Indoor Environmental Quality

27%

Sustainable Sites
22%

Water Efficiency
8%

Resources
20%

Atmosphere

23%
<table>
<thead>
<tr>
<th>SIX LEED CATEGORIES</th>
<th>PRE-REQUISITIES</th>
<th>CREDITS</th>
<th>POSSIBLE POINTS</th>
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<td>Water Efficiency</td>
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<td>Indoor Environmental Quality</td>
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<td>Innovation &amp; Design</td>
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<td>Credit Name</td>
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<tr>
<td>Construction Activity Pollution Prevention</td>
<td>Civil, CM</td>
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<td>Site Selection</td>
<td>Owner/civil</td>
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<td>Development Density &amp; Community Connectivity</td>
<td>Owner</td>
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<td>Brownfield Redevelopment</td>
<td>Owner</td>
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<td>Alternative Transportation, Public Transportation Access</td>
<td>Architect</td>
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<td>Alternative Transportation, Bicycle Storage 5% or 15%</td>
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<td>Alternative Transportation, Low Emitting &amp; Fuel Efficient Vehicles</td>
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<td>Alternative Transportation, Parking Capacity</td>
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<td>Site Development, Protect or Restore Habitat</td>
<td>Landscape, architect</td>
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<td>Site Development, Maximize Open Space</td>
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<td>Stormwater Management, Quantity Control (25% Reduction)</td>
<td>Civil</td>
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<td>Stormwater Management, Quality Control (80% TSS removal from 90% of rainfall)</td>
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<td>Heat Island Effect, Non-Roof</td>
<td>Landscape</td>
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<td>Heat Island Effect, Roof</td>
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<td>Light Pollution Reduction</td>
<td>Lighting</td>
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<td>Water Efficient Landscaping, Reduce by 50%</td>
<td>Civil, Landscape</td>
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<td>Water Efficient Landscaping, No Potable Water Use or No Irrigation</td>
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<td>Innovative Wastewater Technologies</td>
<td>MEP</td>
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<td>Water Use Reduction, 50% reduction or Treat 50% of wastewater</td>
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<td>Water Use Reduction, 20% Reduction</td>
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<tr>
<td>Water Use Reduction, 30% Reduction</td>
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### Energy & Atmosphere

<table>
<thead>
<tr>
<th>Energy &amp; Atmosphere</th>
<th>Resp.</th>
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<tbody>
<tr>
<td>Prereq 1</td>
<td>Fundamental Commissioning of Bldg Energy Systems</td>
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<td>Prereq 2</td>
<td>Minimum Energy Performance</td>
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<td>Prereq 3</td>
<td>Fundamental Refrigeration Management</td>
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<td>Credit 1.1</td>
<td>Optimize Energy Performance, 10.5%</td>
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<td>Credit 1.2</td>
<td>Optimize Energy Performance, 14%</td>
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<td>Credit 1.3</td>
<td>Optimize Energy Performance, 17.5%</td>
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<td>Credit 1.4</td>
<td>Optimize Energy Performance, 21%</td>
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<td>Credit 1.5</td>
<td>Optimize Energy Performance, 24.5%</td>
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<td>Credit 1.6</td>
<td>Optimize Energy Performance, 28%</td>
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<td>Credit 1.7</td>
<td>Optimize Energy Performance, 31.5%</td>
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<td>Credit 1.8</td>
<td>Optimize Energy Performance, 35%</td>
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<td>Credit 1.9</td>
<td>Optimize Energy Performance, 38.5%</td>
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<td>Credit 1.10</td>
<td>Optimize Energy Performance, 42%</td>
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<td>Credit 2.1</td>
<td>On-Site Renewable Energy, 2.5%</td>
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<td>Credit 2.2</td>
<td>On-Site Renewable Energy, 7.5%</td>
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<td>Credit 2.3</td>
<td>On-Site Renewable Energy, 12.5%</td>
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<td>Credit 3</td>
<td>Enhanced Commissioning</td>
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<td>Credit 4</td>
<td>Enhanced Refrigeration Management</td>
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<td>Credit 5</td>
<td>Measurement &amp; Verification</td>
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<td>Credit 6</td>
<td>Green Power</td>
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<th>2</th>
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<th>Materials &amp; Resources</th>
<th>Resp.</th>
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<tbody>
<tr>
<td>Prereq 1</td>
<td>Storage &amp; Collection of Recyclables</td>
<td>Owner, Architect</td>
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<tr>
<td>Credit 1.1</td>
<td>Building Reuse, Maintain 75% of Existing Walls, Floor, and Roof</td>
<td>Architect</td>
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<tr>
<td>Credit 1.2</td>
<td>Building Reuse, Maintain 95% of Existing Walls, Floor, and Roof</td>
<td>Architect</td>
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<tr>
<td>Credit 1.3</td>
<td>Building Reuse, 50% of Interior Non-Structural Elements</td>
<td>Architect</td>
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<td>Credit 2.1</td>
<td>Construction Waste Management, Divert 50% from Disposal</td>
<td>Architect, Contractor</td>
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<tr>
<td>Credit 2.2</td>
<td>Construction Waste Management, Divert 75% from Disposal</td>
<td>Architect, Contractor</td>
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<tr>
<td>Credit 3.1</td>
<td>Materials Reuse, 5%</td>
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<td>Credit 3.2</td>
<td>Materials Reuse, 10%</td>
<td>Architect, Contractor</td>
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<tr>
<td>Credit 4.1</td>
<td>Recycled Content, Specify 10%</td>
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<td>Credit 4.2</td>
<td>Recycled Content, Specify 20%</td>
<td>Architect, Contractor</td>
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<tr>
<td>Credit 5.1</td>
<td>Regional Materials, 10% Extracted, Processed &amp; Manufactured Regionally</td>
<td>Architect, Contractor</td>
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<tr>
<td>Credit 5.2</td>
<td>Regional Materials, 20% Extracted, Processed &amp; Manufactured Regionally</td>
<td>Architect, Contractor</td>
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<tr>
<td>Credit 6</td>
<td>Rapidly Renewable Materials 2.5%</td>
<td>Architect, Contractor</td>
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<tr>
<td>Credit 7</td>
<td>Certified Wood, 50% of Wood FSC Certified</td>
<td>Architect, Contractor</td>
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</table>
### Science / Math / Central Plant Complex

#### LEED TM Worksheet

**Indoor Environmental Quality**

<table>
<thead>
<tr>
<th>Prereq</th>
<th>Credit</th>
<th>Description</th>
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<tr>
<td>1</td>
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<td>Minimum IAQ Performance</td>
<td>MEP</td>
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<td>2</td>
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<td>Environmental Tobacco Smoke (ETS) Control</td>
<td>Owner</td>
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<td>2</td>
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<td>Outdoor Air Delivery Monitoring (CO2)</td>
<td>Architect, MEP</td>
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<tr>
<td>3.1</td>
<td>1</td>
<td>Construction IAQ Management Plan, During Construction</td>
<td>Architect, Contractor</td>
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<tr>
<td>3.2</td>
<td>1</td>
<td>Construction IAQ Management Plan, Before Occupancy</td>
<td>Architect, Contractor</td>
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<td>4.1</td>
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<td>Low-Emitting Materials, Adhesives &amp; Sealants</td>
<td>Architect, Contractor</td>
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<td>4.2</td>
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<td>Low-Emitting Materials, Paints &amp; Coatings</td>
<td>Architect, Contractor</td>
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<td>4.3</td>
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<td>Low-Emitting Materials, Carpet Systems</td>
<td>Architect, Contractor</td>
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<td>4.4</td>
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<td>Low-Emitting Materials, Composite Wood &amp; Agrifiber Products</td>
<td>Architect, Contractor</td>
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<td>Indoor Chemical &amp; Pollutant Source Control</td>
<td>Architect, MEP</td>
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<td>6.1</td>
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<td>Controllability of Systems, Lighting</td>
<td>Lighting, MEP</td>
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<td>6.2</td>
<td>1</td>
<td>Controllability of Systems, Thermal Comfort</td>
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<td>7.1</td>
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<td>Thermal Comfort, Design (Comply with ASHRAE 55-2004)</td>
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<td>Thermal Comfort, Verification</td>
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<td>8.1</td>
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<td>Daylight &amp; Views, Daylight 75% of Regularly Occupied Spaces</td>
<td>Architect</td>
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<td>Daylight &amp; Views, Views for 90% of Regularly Occupied Spaces</td>
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#### Innovation & Design Process

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<td>Owner, Cx</td>
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<td>Innovation in Design: Air Flow Modeling</td>
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<td>Innovation in Design: TBD</td>
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<td>Innovation in Design: TBD</td>
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<td>LEED™ Accredited Professional</td>
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#### Project Totals

- 21 Yes (Achievable) Points
- 18 (Probable) Points
- 9 (Possible) Points
- 21 (Un-Achievable) Points

- **LEED Certified** - Definite (26-32 Points)
- **LEED Silver** - Attainable (33-38 Points)
- **LEED Gold** - Scarcely (May be Cost Limited) (39-51 Points)

DAVIS LANGDON
LEED™ Worksheet
Page 3 of 3
Science / Math / Central Plant Complex

SMCPC:
Physical Model
South View
SMCPC: Physical Model North View
SMCPC - The New Gateway for the Campus
“Quality is never an accident; it is always the result of high intentions; sincere effort; intelligent direction & skillful execution; it represents the wise choice of many alternatives.”

- Chinese Proverb
Shaping Spaces Making Places

Environmental Design & Economic Development

architecture  interior  planning

Science / Math / Central Plant Complex

Kentfield, CA

ED2 international

College of Marin

College of Marin
Kentfield, CA