UCSD
Revelle College Apartments

Regents Committee on Grounds and Buildings
Preliminary Review of Design
November 18, 2008
Project Information

• In-fill project of 510 student beds
  – Six students per apartment suite
  – 2 double bedrooms and 2 single bedrooms per apartment

• Common Areas to include:
  – Conference/meeting space
  – Laundry
  – Mail Services
  – Outdoor program areas

• 153,891 gross square feet/109,658 assignable square feet

• Sustainable design/LEED Silver
2004 LRDP AND 1989 UCSD MASTER PLAN
Proposed Site Location
Site Photos

Looking North
Site Photos

Looking Northeast
Site Photos

Looking Southeast
EXISTING REVELLE COLLEGE BUILDING CONTEXT
MODULAR ELEMENTS
EXISTING REVELLE COLLEGE BUILDING CONTEXT
Aerial view looking to northwest
Aerial view looking to the southwest
CURRENT PLANS

Ground Floor Plan

Typical Upper Floor

Roof Plan at West Bar

Student Residential

Meeting Room

Laundry

Extensive green roof

Terrace with planters
North / South Tower Unit

West Bar Unit

CURRENT PLANS
Looking northeast from Torrey Pines Road
Looking southeast from Torrey Pines Road
View from Revelle Plaza
View from Revelle Commons to Revelle Housing
Looking west from Revelle Commons
Enhanced landscaping and bioswale
**Proposed Materials**

**Structure**  Concrete (Colton type II, type III)

**Cladding:**  - Cement plaster  
              - Fiber cement board  
              (Colors in keeping with the Revelle palette)

**Railings:**  - Fiberglass grating  
              - Painted / natural metals
KALWALL
POLYCARBONATE WITH NANOGEL
GLASS BRICK

CLADDING
MATERIAL PALETTE
ALUMINUM WITH KYNAR FINISH

WINDOW FRAMES
MATERIAL PALETTE
WEST FACING UNITS: EFFECTS OF ANGLE ON INSOLATION LEVEL

ENVIRONMENTAL ANALYSIS

<table>
<thead>
<tr>
<th>Angle</th>
<th>Degrees North of West</th>
<th>Avg Daily Radiation (Wh/m²)</th>
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<tbody>
<tr>
<td>90°</td>
<td>&quot;0&quot;</td>
<td>978</td>
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<tr>
<td>86°</td>
<td>&quot;4&quot;</td>
<td>977.9</td>
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<tr>
<td>82°</td>
<td>&quot;8&quot;</td>
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<td>80°</td>
<td>&quot;10&quot;</td>
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<td>76°</td>
<td>&quot;14&quot;</td>
<td>953.6</td>
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<tr>
<td>70°</td>
<td>&quot;20&quot;</td>
<td>906.6</td>
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WEST FACING UNITS: INCIDENT SOLAR RADIATION, MARCH-SEPT.  
ENVIRONMENTAL ANALYSIS
WEST FACING UNITS: DAYLIGHT PENETRATION: JUNE 21, 2PM
ENVIRONMENTAL ANALYSIS

EAST BALCONY-STRaight (EXISTING SCHEME)
- 90 degrees (east/west)
- 76 inches of light (L)
- 65 inches of light (W)

EAST BALCONY-HINGED
- 76 inches of light (L)
- 65 inches of light (W)
- All bedrooms receive direct sun.
- Common rooms in deep shade.
- 90 degrees (east/west)

WEST BALCONY-STRaight
- 90 degrees (east/west)
- 76 inches of light (L)
- 65 inches of light (W)
- No direct sun penetration (all rooms).
- Common rooms in shade but with more light.

WEST BALCONY-HINGED
- 76 inches of light (L)
- 65 inches of light (W)
SOUTH FACADE: SEASONAL EFFECTIVENESS OF EXTERNAL SHADING DEVICES

ENVIRONMENTAL ANALYSIS

AVG DAILY RADIATION, Wh
PER BAY ON SOUTH FACADE EXT. WALL SURFACE

TYPICAL HEATING/COOLING LOADS
HEATING ONLY
MOSTLY HEATING
MOSTLY COOLING

AVAILABLE SOLAR RADIATION
(NOT TO SCALE)

EXPOSED STRUCTURE ONLY
VERTICALS
HORIZONTALS

A
BASE: EXPOSED CONCRETE STRUCTURE ONLY
B
2 VERTICAL FINS, 30° DEEP
C
24" HORIZONTAL AT CLG HT.
D
12" HORIZONTAL AT CLG HT.
E
24" HORIZONTAL AT SILL HT.
ALIGN W/ EX. COLUMN FACE
F
24" HORIZONTAL AT SILL HT.
ALIGN W/ INT. COLUMN FACE
### WEST FACING UNITS: INCIDENT SOLAR RADIATION ENVIRONMENTAL ANALYSIS

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORIENTATION</th>
<th>AREA-SF</th>
<th>AREA-m²</th>
<th>AVG DAILY RADIATION</th>
<th>% CHANGE</th>
<th>DIRECT</th>
<th>DIFFUSE</th>
<th>RADIATION OVER SURFACE</th>
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<td>90</td>
<td>9960</td>
<td>925</td>
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<td>1516</td>
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<td>9960</td>
<td>925</td>
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<td>530</td>
<td>445</td>
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<tr>
<td>Northwest Face</td>
<td>76</td>
<td>6327.8</td>
<td>587.9</td>
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<tr>
<td>Southwest Face</td>
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<td>3428.1</td>
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<td>3%</td>
<td>1565</td>
<td>821</td>
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<td>1135</td>
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<td>Northwest Face</td>
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<td>398</td>
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<td>-51%</td>
<td>529</td>
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<td>West Balcony: Angled</td>
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<td>-57%</td>
<td>552</td>
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Sustainability Features

• Passive solar building orientation and shading devices to take advantage of and control solar gain
• Natural ventilation and cross ventilation in each apartment
• High performance exterior envelope
• Daylighting optimization
• Energy efficient building systems
• Water conservation w/low use plumbing fixtures
• High albedo materials/finishes to reduce heat island effect on roofs
• Rooftop photovoltaics infrastructure
• Recycled and sustainable building materials
• Bioswale landscape for storm water drainage and filtration
• Drought tolerant landscape materials
Discussion...
Slides following are not currently in presentation…
<table>
<thead>
<tr>
<th>Sustainable Strategy Options for Consideration</th>
<th># of LEED Points</th>
<th>Cost Premium</th>
<th>Payback Period</th>
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<tr>
<td><strong>SS 5.2: Site Development</strong>, Maximize Open Space</td>
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<td>$0</td>
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<tr>
<td><strong>SS 6.2: Storm Water Design</strong>, Quality Control</td>
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<td><strong>EA 2: On-Site Renewable Energy</strong></td>
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<td><strong>EQ 2: Increased Ventilation</strong></td>
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<td><strong>EQ 7.1: Thermal Comfort</strong>, Design</td>
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<td>in EQ 2</td>
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<td><strong>EQ 8.2: Daylight &amp; Views</strong>, Views for 90% of Spaces</td>
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PRELIMINARY SHADING DEVICES
SKETCHES
PRELIMINARY SHADING DEVICES
SKETCHES
The Revelle College Apartments infill project will be located on approximately 2.5 acres located within the Revelle College Neighborhood at the south-west portion of the UCSD main campus.

The project complies with the 1989 UCSD Master Plan and the 2004 Long Range Development Plan. The design of the project is in conformance with the vision guidelines articulated in the 2006 Revelle and Muir Colleges Neighborhood Planning Study.

The project will provide 85 four-bedroom apartments which will accommodate 510 undergraduate students, and 2 three-bedroom staff units. Resident apartment suites consist of six students accommodated in two single bedrooms and two double bedrooms.

The project design consists of a single building composed of a “C” shape with a north, west and south wing (10, 5 and 8 stories respectively).

In addition to the apartments, the project will provide a conference room, laundry area, mail area and maintenance and custodial spaces. Complementary outdoor spaces would be developed to accommodate a variety of activities for the residents.

The project is scheduled to be completed for fall 2011 occupancy.

The project will achieve USGBC LEED Silver rating.

The proposed Revelle College Apartment project would encompass total of approximately 109,658 assignable square feet (asf) and 153,891 gross square feet (gsf) of building space.

Total project costs are $69,461,000 at CCCI 5425

The construction cost is $316.17 per gsf.