

Building on Bren: *Putting a Price on Green Lab Design*

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Building on Bren: *Putting a Price on Green Lab Design*

Understanding Bren

Project Overview and Design

Measuring Bren

First Costs

Operations Costs

Environmental Impacts

Beyond Bren

Costing Green Labs around the country

Costing Labs 21 EPC/ LEED Labs

Distribution of full report

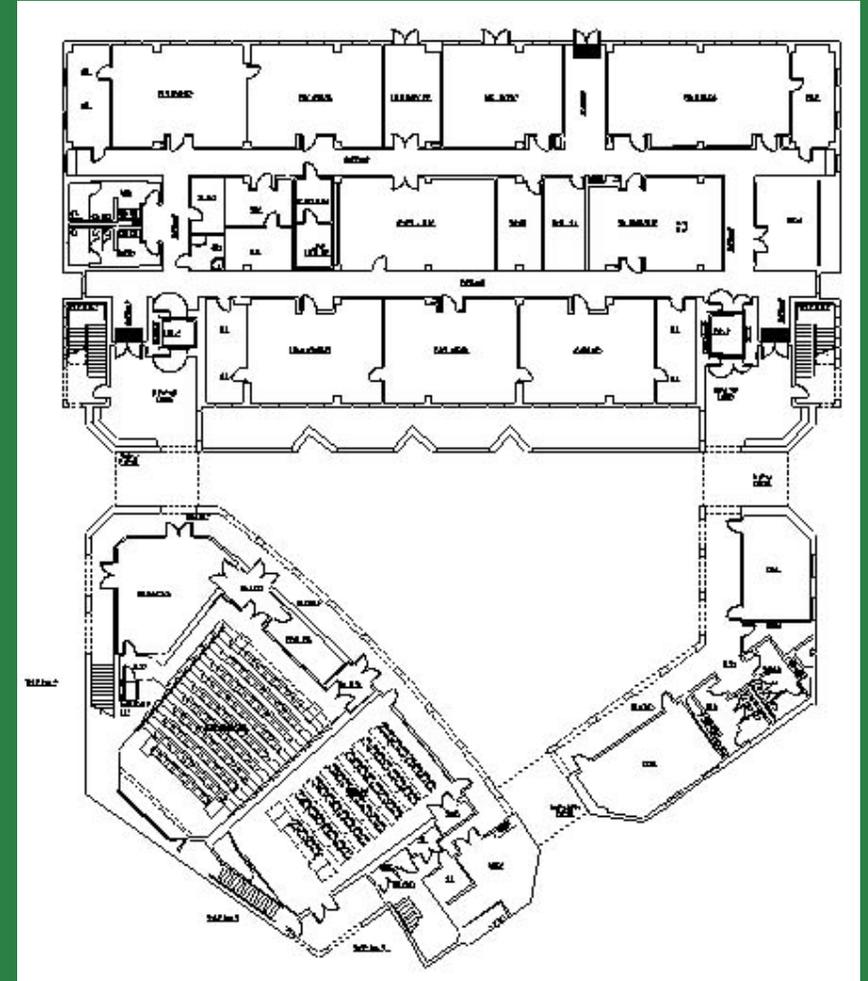
Understanding Bren: *Project Overview*

- Four-story 84,672 gsf building
- 21,058 sf laboratory space
- 25,246 sf classrooms, offices and conference rooms
 - 124 Offices
 - 17 Labs
 - 17 Fume Hoods
- \$20 M construction budget
- LEED™ 1.0 Pilot Project



First Laboratory Building to Achieve a LEED Platinum Award

Understanding Bren: *Design*



Understanding Bren: *Green Measures*

- Site and Construction Management
- Recycled Materials
- Energy Efficiency
- Water Conservation
- Non-Toxic Chemicals
- A "Living Laboratory"
- Installation of certain features

Measuring Bren: *LEED Ratings*

- Version 1.0
- Version 2.0
- LEED Labs

Measuring Bren: *Construction Costs*

Green Premium at Bren*

Certified = \$0

Silver = \$0

Gold = \$450,000 or 2.5%

Platinum = \$900,000 or 4.8%

*Calculated as percentage of construction cost

Measuring Bren: *Energy Use*

Bren Hall Actual vs. Projected Electrical Consumption

Insert chart here

Energy Comparison

Bren Energy Use Compared to Other Lab Projects

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Measuring Bren: *Environmental Indicators*

Energy Saved:

Materials Saved:

Water Saved:

Reduced Pollution:

Climate Impact:

Measuring Bren: *Total Costs*

First Costs

Operating Costs

Costs over Time

Net Present Value

Beyond Bren: *Understanding Embedded Points*

UC Santa Barbara design standards

Campus infrastructure

California Building Codes and Standards

Geography and climate

Beyond Bren: *Understanding Embedded Points*

Cost Implications:

By LEED point

Beyond Bren: *Designing to LEED* *Version 2.1*

Design Implications

- by LEED point and greening measure

Cost Implications:

- Construction (first) costs
- Operating costs
- Net present value

Beyond Bren: *Designing to Labs 21* *EPC/LEED Labs*

Design Implications

- by LEED credit and green measure

Beyond Bren: *Designing to Labs 21* *EPC/LEED Labs*

Cost Implications:

- by LEED credit and green measure
- Construction
- Operating
- Net present value

Beyond Bren: *Designing in other Locations*

Chicago:

Design and Cost Implications

- by LEED credit and green measure
- Construction (first) costs
- Operating costs
- Net present value

Beyond Bren: *Designing in other Locations*

Boston:

Design and Cost Implications

- by LEED credit and green measure
- Construction (first) costs
- Operating costs
- Net present value

Beyond Bren: *Designing in other Locations*

Houston:

Design and Cost Implications

- by LEED credit and green measure
- Construction (first) costs
- Operating costs
- Net present value

Beyond Bren: *Designing in other Locations*

Phoenix:

Design and Cost Implications

- by LEED credit and green measure
- Construction (first) costs
- Operating costs
- Net present value

Beyond Bren: *Conclusion*

Discussion

Handout of full report