

# Notes from the Open Forum/Town Hall Meeting at Tradeline's Conference:

## *Academic Science Buildings 2005*

December 12-13, 2005  
St. Petersburg, Florida

**Objective of these notes: To develop contacts and comments on issues not fully addressed in the regular proceedings**

1. Questions to the group from the group with responses –  
“Green” design for science buildings
  
2. Summary: “Some things I heard at this conference...”  
(Some summary observations by Steve Westfall, President, Tradeline, Inc.)

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# Open Forum / Town Hall Meeting Notes

From "Academic Science Buildings 2005"

December 12-13, 2005 - St. Petersburg, Florida

## 1. QUESTION TO THE GROUP FROM THE GROUP, WITH RESPONSES

### Top issue of interest – "Green" design for science buildings

#### 1.1 Who is doing science building projects with "green building" features?

University of Florida – a standard for us

Univ of Alberta -- a standard for us

UNLV Science building 200ksf

Cal State Stanislaus 130ksf<sup>1</sup>

UC Davis physical science 90ksf

State of AZ – all new buildings

Richard Stockton College of NJ – LEED Gold

Univ of RI – LEED Silver – in schematic design

Univ of Cincinnati

Mt. Holyoake college science building

Swarthmore college

Ohlone Community College – a new campus

Univ of GA

St. Louis Univ

#### 1.2 What green building features should be on our planning menu?

Affiliated Engineers, SE, Inc. - Joe Limpert

UFL – capturing rainwater, using as gray water to supplement irrigation. Project – Rincker hall, gold rated LEED. 15% cost premium for gold LEED. Also energy recover, heat wheel, operable windows, built to make use of public transportation. 60ksf, school of building construction.

Cannon Design - Tom Harvath

St. Louis univ biomed research building 206k gsf, LEED Silver

Roofs are either reflective or green roof

Interior spaces with views to exterior

Light monitors

Redevelopment of urban site

Materials – recycled or rapidly renewable

Contractor separated waste streams from building for appropriate recycling

Two main costs – 1) the above items cost half-mil \$ on \$60mil project, and 2) external commissioning agent which added \$200k to what might be a standard commissioning fee.

Perkins+Will - Howard Weiss

At Ohlone Community College Science Building project, these items were on their planning list

Photovoltaics

Enthalpy wheel

Ground source heat

[130ksf, LEED Gold]

Payette - David Feth

Univ of Rhode Island

Recapturing rainwater

Heat recovery, possibly heat wheel or glycol loop

Operable windows

Public transportation  
Rapidly renewable mat'ls  
Daylighting  
Green roofs  
Half program is teaching lab – securing device on operable windows

Univ of Alberta - Elizabeth Dechert  
Ours is a densely packed campus  
Looking at Green Demolition of existing buildings that involves recycling or re-using materials  
Bricks... have local recycling company that will take steel beams/joists, windows. We are not reusing the actual materials themselves, but we provide them to a recycling company, and we get credit for that.  
We are pursuing LEED certification for new facilities  
We find that the first thing to go from a “green” project, however, is landscaping. FM is expected to use the operating budget to pay for the project landscaping budget.

Hellmuth, Obata + Kassabaum, Inc. - Stuart Lewis  
Univ of GA – cost of water recovery system \$150k  
Administration put money in at the end of VE to make sure it was maintained in the program.  
Lighting saved \$20k in labs  
Energy recovery makes sense – enthalpy wheels or coils. Duct sizing, cooling tonnage. Take it out of capital budget. Reduced scope/quality for this investment – payback 3-5yrs. Emory example

Perkins+Will - Russ Drinker  
Stanford University – minimum threshold must be established so you can't VE it out, like any other functional program criteria  
Hard to hang onto operable windows – typically we see this as being pressured out of the program. Basic responsibility for this decision being at the personnel level.

Arizona State University - Rick Martorano  
Parking structure with PV roof  
We lost operable windows  
We lost photovoltaics

Daylighting, occupancy sensors, bioremediation of runoff water, segregation of demolition materials always make sense.

Univ of Mississippi - Ian Banner  
Site planning -- Sensible orientation of windows

### **1.3 Why go for LEED Certification rather than just LEED principles?**

Einhorn Yaffee Prescott - Charles Kirby  
At Mt. Holyoake College they asked, “Why not do it ourselves?” They got halfway into doing it themselves and found it was far worse – the problem stemmed from internal politics etc.  
Schools are doing LEED because students are demanding it of them. It reinforces a culture of people that really care. It does cost, but they can show the students they are doing it. It is an issue of trust between admin & student body

Arizona State University - Rick Martorano – Political: It looks good. It is a recruitment tool for faculty + students. Also, it guarantees the LEED features will stay in the job, and not get VE'd out, if LEED is a Board of Governors-level decision

Ohlone college – Our President made the decision – It was leadership driven. If people try to take it out, LEED features then fall into the category of measuring what we say we believe in.

Univ of Alberta - Elizabeth Dechert -- The question as to whether “student driven” applies equally to small and large universities. All are student-driven. Faculty wants sustainability policy. Also facilities & operations feel accountable to physical facilities and that drives them toward the certification.

#### **1.4. Water conservation as part of LEED**

Waterless urinals – about 15% of the group indicated the use of waterless urinals.

Univ of Nevada, Las Vegas - Peg Rees

We are putting waste water from our reverse osmosis system back to urinals.

Harvard University Faculty of Arts & Sciences - Sharalee Field

We are using RO reject water to quench autoclaves to satisfy second use requirement in Massachusetts.

We're committed to sustainability and some projects are going for LEED but mostly we don't pursue it due to costs. One building quoted \$150k for LEED paperwork tracking for A&E team.

#### **1.5 Institutions using LEED principles, but not typically going for certification:**

UTMB

College of Holy Cross

Univ of MD college park

Univ of California & Stanford

Institutions going after LEED Certification

25% of the group

#### **1.6 Additional costs of going for LEED**

Einhorn Yaffee Prescott - Charles Kirby

Mt Holyoake – base LEED 3% (lab building cost)

Commissioning cost

Points that have the most energy payback are the most expensive points to get. You can buy cheaper LEED points around IAQ and finishes. Can reduce cost of LEED by going after cheaper points.

Hellmuth, Obata + Kassabaum, Inc. - Stuart Lewis – State of California study on cost of green buildings.

Small dataset, Silver LEED >2%. There is a “lack of experience” premium.

Check out the GSA study on the cost of green building (mostly office buildings). Google or contact me.

Cannon Design - Tom Harvath -- In a sense, the cost question is somewhat of an open-ended question, and might better be asked, “what is the marginal cost.” It depends on your starting point. Typically putting our labs on LEED scale without thinking of LEED points we are already starting at 24-26 points which is close to certification. If you're not accustomed to doing energy-conscious buildings you will be looking at a bigger premium. Good starting design will be close to LEED.

#### **1.7 Miscellaneous comments on LEED**

University of California system mandates many things you would typically do under LEED to achieve energy performance. Another way to look at LEED is to ask “what is the cost of not doing buildings that are safer/better for the environment?”

Univ of Nevada, Las Vegas - Peg Rees

Managing the contractors' waste stream is a – nobody is trained in this. Taking time & personal energy, and critical for any LEED scoring.

Univ of Mississippi - Ian Banner

It would be useful to see how and if LEED projects can show savings in lifecycle costs.

## 2. “Some things I heard at this conference”

Here are some things I heard at this conference. This is by no means a summary of the conference, but these items may serve as a reminder of, and supplement to, what YOU heard. – Steve Westfall, President, Tradeline, Inc.

2.1 If you want an interdisciplinary science building or core technical facility that get used, location is the critical factor. Put it where the users are. Users won't walk far to use it.

2.2 The trend toward student-generated outcomes as a teaching pedagogy means team-teaching with modern instruments, and that in turn makes safety a top design priority.

2.3 Interior glass is becoming a more common feature in research and science teaching facilities. It enhances safety, fosters a community atmosphere, is good for facility tours and recruiting, and makes science a theme attraction.

2.4 To “amp” the socialization factor of a science building in the planning stages, do away with corridors and replace them with meeting and hang-out spaces.

2.5 Whatever instruments you are planning for now, in five years they will be different. This is a recommendation for mobile equipment carts and overhead distribution grids for utilities.

2.6 The big flexibility concept for labs is to separate the ceiling utility distribution grid from what does on at the floor level.

2.7 Construction cost escalation is expected to continue at 1% per month. Plan for it with a separate escalation funding source, pursue a shelled-space strategy, shorten the project development cycle, or all three.

2.8 You will save a lot of construction money if during the project there is no change in school leadership and no change in the design/construction team. This suggests doing projects fast.

2.9 “Soft space”, e.g. informal learning space, public space, and lounge areas are now being seen as necessary, and they are accounting for as much as 5% of the net square footage of science buildings.

2.10 If you are remodeling for BSL-3 space for avian flu research, according to the NIH/CDC BMBL 5<sup>th</sup> Edition, you need showers, and hence [expensive] effluent decontamination.

2.11 Consider under-counter glass washers. PI's love them.

2.12 When capital dollars are easier to come by than operating funds, use capital funds to buy multi-year service contracts for research tools.

2.13 Today it is generally recognized that science buildings are collections of many specialized spaces. No more just-chemistry, just-biology, or just-physics buildings.

2.14 Hire over-qualified lab techs (PhDs), and they will be a strong augmentation to your teaching and research activities.

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