

Entering the Chamber of Green Phenomena: New Adventures in Sustainable Construction

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2010 CASH Annual Conference

Lake Tahoe Unified School District – South Tahoe High School Projects

- History
 - Master plan completed 2008 recommending CHPS resolution
 - November 2008 bond passed
 - District pursued CTE & ORG funds and high performance grant
 - Construction began in June 2009!



*Lake Tahoe Unified School District
– Green Career Academy*

- Two CTE Grants
- CHPS designed
- Lease/Leaseback
- Contractor with **NO DSA Experience!**



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3

*Lake Tahoe Unified School District
– New Classroom Building*

- ORG Grant
- High Performance Grant
- CHPS designed
- Lease/Leaseback
- Contractor with **NO DSA Experience!**



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4

Lake Tahoe Unified School District – South Tahoe High School

- Project Challenges And Opportunities
 - Working with a contractor from outside the K-12 world
 - L/LB benefits vs. project schedule constraints
 - Project budget, campus budget and GMP
 - Contractor's speed vs. inspection realities
 - Paperwork protocols: doing it vs. documenting it
 - Value engineering: quality, cost & CHPS commitment

Insuring Your Project

- What are the big issues?
 - Breach of warranty
 - Project delays
 - Decertification
 - Ordinance and law – code requirements
- What products are available?
 - Property
 - Green upgrade forms
 - Green building endorsement
 - Course of construction – delay

Insuring Your Project, continued

- Liability
 - Green reputation
 - Defense
 - Crisis management
 - Pollution
 - Indoor air quality management
 - Fungi and legionella bacterium
- What's on the horizon?
 - Professional liability – architects and engineer
 - Performance bonds

Available "Green" Industry Form Contracts

- Whole-Team Approach:
 - ConsensusDOCS 310: Green Building Addendum
 - DBIA's Sustainable Projects Goal Exhibit (With Provisions on LEED Certification), for design-build projects
- Design Team
 - B214–2007, Standard Form of Architect's Services: LEED Certification, AIA
 - B211–2007, Standard Form of Architect's Services: Commissioning, AIA

Available "Green" Industry Form Contracts, continued

- Model leases:
 - [Model Green Lease](#), Corporate Realty, Design & Management Institute
 - [National Standard Green Office Lease for Single-Building Projects](#), Real Property Association of Canada
- Lease guidance documents:
 - [Green Leases Toolkit 2.0](#), California Sustainability Alliance
 - The [Green Lease Guide](#), a coalition of Australian public and other entities
 - [Guide to Writing a Commercial Real Estate Lease, including Green Lease](#), Building Owners and Managers Association

Issues to Address During Team Selection and Contract Negotiations

- Use LEED Checklist and possibly other responsibility matrices as exhibits to contracts. Topics should include responsibility for:
 - Documentation
 - Submission to USGBC or CHPS
 - Preparation of OPSC application / attachments
- Owners should review the actual language of the LEED commissioning point requirements before signing contracts with IOR, design team, contractor and other consultants. The level of commissioning chosen will affect who the commissioning agent reports to and is paid by.

Issues to Address During Team Selection and Contract Negotiations, continued

- It is important to describe, not just identify, the project goals.
 - Even describing project goals isn't sufficient to shift responsibility for achieving them unless the parties' respective duties are set forth.
- Pros/Cons of delivery systems:
 - Design-Bid-Build
 - Design-Build
 - Lease/Leaseback
 - Multi-Prime

Issues to Address During Team Selection and Contract Negotiations, continued

- Be aware that designers may have a lower standard of care for cutting-edge technology. This depends upon what level of expertise their contracts require them to have and the qualifications they represent themselves as having.
- Consider whether the designer / contractor will be responsible for the cost of work which is not physically necessitated by a change, but is necessary in order to achieve certification.
- Specify that substitutions will not be allowed if they prevent the project from achievable certification through the same point(s).

Issues to Address During Team Selection and Contract Negotiations, continued

- Some options if you have external events or impacts that depend upon the date that a project is certified as compliant, rather than just on the date that the project is complete:
 - Retaining a portion of compensation until certification
 - Requiring a bond ensuring completion
 - Liquidated damages

Design and Construction Phase Best Practices

- DO NOT start performance until you have reviewed, not just the certificates of insurance, but also the actual insurance policies and all endorsements.
- Register the project ASAP, to avoid disputes arising from changes to LEED / CHPS requirements after execution of contracts but before performance.
- Have an expedited change order approval system in place. Some points, particularly innovation points, will impact many different trades and other points if they are eliminated.

What If the Project Doesn't Meet Your Expectations?

- “Consequential Damages” are money awarded to compensate for losses that arise not as a natural result of the breach of contract but because of some particular circumstance of the injured party.
 - They are only awarded if the unique injuries are “reasonably foreseeable” to the party being sued.
- Examples of damages which might be considered “consequential:”
 - failure to obtain projected energy and utility savings,
 - failure to obtain project certification at all or in time to obtain funding or tax incentives,

What If the Project Doesn't Meet Your Expectations?

- The owner's inability to attract renters who want to lease sustainably-built facilities, and
- The owner's loss of reputation.
- Many contracts have waiver-of-consequential damages clauses, which you will need to consider very carefully.
- If the problem that leads to damages is considered to be a tort rather than a breach of contract, you would almost certainly be precluded from recovering consequential damages unless you state otherwise in the contract.
- The ConsensusDOCS Green Building Addendum states that damages which relate specifically to failure to achieve a identified green status are consequential, subject to waivers of consequential damages.

What If the Project Doesn't Meet Your Expectations?

- Liquidated Damages:
 - Not just for substantial completion.
 - A good option for consequential damages.
- Consider whether the School District wants to limit dispute resolution to mediation and binding arbitration.
 - If you do, specify that the ADR neutral must be knowledgeable about sustainable construction rules and practice.

Ongoing Requirements

- Under LEED version 3.0 for new construction, owners must agree to one of these three conditions:
 - The building must be recertified each two years, under LEED for Existing Buildings: Operations & Maintenance,
 - Consider the effect of plug loads and emerging technology.
 - The owner must annually provide energy and water usage data to the USGBC, or
 - The owner must sign a release that authorizes USGBC to access the building's energy and water usage data directly from the building's utility provider.

Ongoing Requirements, continued

- Failure to do so can lead to decertification.
- Will your property insurance cover the cost of rebuilding to the same standard?

Modular Solutions

- Common misconception is that modular buildings cannot be green. In fact, Modular construction techniques have been shown to be inherently advantageous in several major areas.
 - The factory setting reduces material waste.
 - There is less material exposure to inclement weather.
 - There is a smaller carbon footprint because workers reside near the plant.
 - The site is disturbed less.

LEED Action Plan for Contractors

- Preconstruction Phase
 - Early involvement of the contractor can help outline responsibilities and avoid potential problems.
 - Have clear goals that are outlined by owner and action plan to meet them.
 - LEED projects require a high level of coordination to educate subcontractors and suppliers.

LEED Action Plan for Contractors, continued

- Construction Phase
 - Having two jobs sites can present problems and opportunities
 - Make sure your contractor monitors workers and subcontractors to prevent unapproved materials from entering the worksite.
- Project Closeout
 - Make sure that your project has a clear commissioning plan.
 - Subcontractors should be aware of the additional steps required for closeout.

Project Solutions and Realizations

- Many materials we used in our building already achieved LEED credits.
- Significant portion of lumber already utilized in the construction of our buildings was FSC-certified.
- Waste management\recycling practices were already occurring in our factory.
- LEED projects should not be feared but present an opportunity.

U.C. Merced, Early Childhood Development Center

- This project is pending LEED Gold certification.
- 3 areas of LEED certification:
 - context and community connectivity
 - architectural, engineering and construction choices
 - construction administration and processes
- Water efficiency, dual flush toilets savings of 36.2% over baseline usage.
- The project outperformed Title 24 by 17%. (Energy Savings + Cost)

U.C. Merced, Early Childhood Development Center, continued

- The building is 7,388 sf and uses 60 amps total power.
- Waste diversion: in plant 96%, on site 75%.
- Recycled materials utilized in construction exceeded 20%.
- Regional material utilized in construction exceeded 20%.
- FSC lumber utilized on project exceeded 50%.

U.C. Merced, Early Childhood Development Center, continued

- Recycled paper product insulation
- Energy efficient low-e windows



- Material separation to prevent unapproved product installation into the building

U.C. Merced, Early Childhood Development Center, continued



- Low voc paints, sealants, adhesives, flooring, ceiling tiles

- Lighting system that senses light level in occupied spaces and turns off lights accordingly



Conclusions/Recommendations

- Modular buildings are an efficient and green solution to your facility needs.
- Ask your manufacturer to incorporate green products into your projects.
- Green\sustainable construction is not limited to conventional ("stick-built") construction.