

LEED + Furniture And The Impact It Can Have On A Project

A.A case study of the Student Services Building at the University of Texas at Dallas and the decisions made concerning the contribution it would make to the LEED NC 2.2 certification. A brief overview of LEED ID+C will also be included.

B.Project Cost Information

Begin Construction : May 5, 2009

Substantial Completion: July 21, 2010 (14 months)

Total Project Cost \$27,500,000

Total Project Cost per Square Foot \$370*

Construction Cost per Square Foot \$278

Moveable Furniture Budget \$2,200,000

Moveable Furniture Per Square Foot \$29.16 SF

Gross SF 74,343 SF

Net SF 54,331 SF

Efficiency Ratio 73.10

SF per Person 252 SF Per Person

**includes construction fees, FFE, consultant fees, OFPC Management Fees, LEED costs, data & AV, Cx2, contingency*

C. Typical Floor Plan

D. Building Photos

E. Sustainable Goals of UT Dallas and UT System - LEED certification where it makes fiscal sense. This is the first LEED Platinum Building for the University of Texas System.

- a. Out of the 8 Academic Campuses, UT Austin and UT Arlington have a LEED Silver mandate for all new construction.

F. Credits that Furniture Affects

- a. EAc 1.1 Optimize Energy Performance, Lighting Power
- b. *(Note: if you use furniture for one MR credit you must use it for all MR credits)*
- c. MRc 3.3 Resource Reuse, 30% Furniture and Furnishings
- d. MRc 4.1 & 4.2 Recycled Content
- e. MRc 5.1 & 5.2 Regional Materials
- f. MRc 6 Rapidly Renewable Materials
- g. MRc 7 Certified Wood
- h. IEQ 4.5 Low Emitting Materials, Systems Furniture and Seating
- i. IEQ 6.1 Controllability of Systems, Lighting
- j. IEQ 8.3 Daylight & Views, Views for 90% of Seated Spaces
- k.* *ID+C credit that can be borrowed for BD+C*

G.Sustainable Furniture Selection Criteria for Student Services

- a. **Private Offices** Wood case goods with plastic laminate tops
Greenguard, SCS certified, FSC certified veneer and substrate
- b. **Open Plan Workstations** Metal frame with plastic laminate or linoleum work surfaces
(rapidly renewable) FSC certified wood substrate PLA panel fabric
(rapidly renewable)
- c. **Conference Rooms** Plastic laminate tops or linoleum tops (rapidly renewable) FSC
certified wood substrate
- d. **Task Seating** Greenguard or SCS certified
- e. **Conference Seating** Greenguard or SCS certified
- f. **Guest Chairs** Greenguard, SCS Certified
- g. **Task Lights** Low voltage LED lamps

H.Sustainable Criteria Cost Comparison

Private Offices Up charge for FSC Veneer & Substrate

Mfg. "A"	30%-40%
Mfg. "B"	15%
Mfg. "C"	7%
Mfg. "D"	10%-15%
Mfg. "E"	0%

- a. **Open Plan Workstations** (*FSC work surface substrate or linoleum work surfaces, PLA panel fabric*)

Mfg. "A"	
FSC substrate	15%-20%
Linoleum work surfaces with pvc edge	20%
PLA Fabric	(40%)

I. Recycled Content – MR Credit 4.1 and 4.2

J. Regional Materials – MR Credit 5

K. Certified Wood – MR Credit 7

L. Optimize Energy – EAc 1.1

- a. Performance Lighting Power - When the engineers are running their lighting load calculations they **MUST** include the task lighting into their numbers.
- b. With the codes becoming more stringent and depending on the lighting requirements of the space, it may be necessary to use an LED fixture that uses **7 – 9 watts** compared to a CFL that may use 26 watts.

M. Resource Reuse MRc 3.3

- a. Resource Reuse, 30% Furniture and Furnishings (1 point)
- b. Use salvaged, refurbished, used (**must be 1+ year old**) or existing furniture and furnishing for 30% of the **TOTAL** furniture and furnishings budget.
- c. Items that can be included are systems furniture, case goods, lounge furniture, file cabinets, decorative lighting, accessories such as planters and window treatments.
- d. To determine the value of the existing furniture you would look at "**replacement value**" similar to what an insurance company would use to put value on a damaged materials in your home.

N. Recycled Content MRc 4.1 & 4.2

- a. This is where furniture can really help a ID+C project. It can sometimes be difficult to meet the **minimum %** (by cost) required on a tenant space for the MR credits because the dollar value just isn't enough. All of the major furniture manufacturers can provide you with this information. Most include it on their website.
- b. Separate "**pre-consumer**" from "**post consumer**" content as required by the LEED template. Obtain the cost information for these products. An invoice is the best form of compliance. If you are audited on this credit you may have to produce it anyway.

O. Regional Materials MRc 5.1 & 5.2

- a. Furniture can really help a ID+C project depending on where the project site is located. Usually the 3 largest costs on a ID+C project are going to be:
 - Carpet
 - Ceiling tiles and grid
 - Furniture
- b. With most of the major carpet manufacturers are located in Georgia, California or Virginia it may be difficult to obtain this credit especially if you live in some of the southern states such as Texas or Louisiana.
- c. Furniture manufacturers tend to be located all over the country so obtaining this credit is possible.

P. Rapidly Renewable MRc 6

- a. A difficult credit to achieve due to few resources for renewable materials
- b. Currently there are the following resources for renewable materials:
 - PLA (corn based) panel fabric
 - Linoleum work surfaces
 - Bamboo case goods
 - Agrifiber or wheat board substrate
 - Cotton/denim insulation
 - Wool, cotton, linen or bamboo fiber upholstery
 - Soy based products

Q. Certified Wood MRc 7

- a. This credit can be very confusing and difficult to achieve because of how the data has to be documented. First when furniture is considered for this credit you must include both the face veneer as well as the substrate if the substrate contains pre consumer recycled content. Post consumer recycled content is not part of the calculations.
- b. The substrate must also be FSC, not just the veneer. For example, if you have a case good product that has an FSC veneer on the face this accounts for only a small percentage of the material cost.
- c. You will also need to obtain the “**weighted value**” of the FSC component. This is information the furniture manufacturer should be able to provide, however it is currently not information they provide on their website.

R. Low Emitting Materials IEQc 4.5 - **Systems Furniture and Seating**

- a. This is the credit that most projects usually go after. The requirement only takes into account the following:
 - Open plan furniture (workstations)
 - Task chairs used at the workstations
 - Guest chairs used at the workstations
- b. Lounge furniture, conference room furniture, break room furniture or other ancillary items are not part of this credit and at this time do not need to comply to any sort of certification such as Greenguard, SCS or FSC.

S. Controllability of Systems, Lighting IEQc

- a. Furniture can help with this credit. By providing a task light at each workstation this will help obtain this credit. The other part of this credit requires lighting controls (switches) for each private office, conference room, multipurpose room, break rooms, etc. If controls (either switches or task lights) are provided for 90% of the spaces then this credit is possible.
- b. The wattage for each task light must be included in calculations for EAc 1 Optimize Energy, Lighting for LEED ID+C and EAc1 Optimize Energy for LEED BD+C.

T. Daylight & Views, IEQc 8.3 - Views for 90% of Seated Spaces

- a. This credit requires 90% of the occupants have direct views to the exterior from their private office or workstation. In order to obtain this credit strategies include:
 - Glazed sidelights
 - Glazed office fronts
 - 42” high workstation panels
 - For taller panels used glazed panels above 42”

U. FAQ's

- a. Can furniture help me to get an Innovation and Design point?
 - If you have C2C products that meet the requirement of 2.5% of material costs for the project - this could be an ID credit.
There are several furniture lines that offer C2C products.
 - Borrowing MRc 4.5 from ID+C for an BD+C project
- b. Does furniture need to be installed prior to the Flush Out or IEQ Indoor Air Testing?

Furniture does not need to be installed prior to flush out for a BD+C project, however it does need to be in place for an ID+C project.

V. Best Practices

- a. Require all furniture dealers use “green” cleaning products
- b. Require all floor and wall protection to be older masonite that has already off gassed or if it is new it must be formaldehyde free.
- c. Transportation – request that furniture be blanket wrapped or shrink wrapped on pallets in lieu of individual crates or boxes.
- d. Uncrate and/or un-box all product outside the building, weather permitting.
- e. Check with the general contractor to see if contributing the packing waste/recycling would help contribute to the construction waste.
- f. End of Life – for all C2C product confirm that the manufacturer will take back the product at the end of its life.
- g. Request only full trucks be shipped. Combine order with other orders on the same route to reduce the use of fuel

W. Taking a Greater Stand

- a. Are we including furniture or not?
- b. Should we select furniture other than just the workstations, task chairs and guest chairs that comply with Greenguard, SCS, levels and SMART for all the furniture in the project?
- c. How do we handle the upholstery fabrics, leather, lounge seating, conference chairs and tables?
- d. What about using natural stones such as granite or marble on conference tables?