PRACTICING LAW INSTITUTE – SUSTAINABLE DEVELOPMENT CONFERENCE 2010

EMERGING STANDARDS OF CARE FOR SUSTAINABLE DESIGN & CONSTRUCTION

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The Evolution of Sustainability

The evolution of sustainable design and construction is rooted in the emerging global awareness that our energy sources are not unlimited and that the impact of our built structures on the environment is profound.

1940's-1950's

- Individual designers and developers began experimenting with energy efficiency measures and recycled materials – not a lot of aesthetics involved – solar collectors plopped on roofs, hay bale mudded walls and composting toilets make their debut
- Conservation of environmental resources in design began to be explored

1960s-1980s

- The OPEC Crisis hit the United States hard, forcing an over-consuming nation to confront significant costs for energy
- Trade groups began coalescing, first in the area of solar energy, and then broadening to explore a wider range of alternative, environmentally-friendly, non-polluting energy sources and means of reducing energy consumption

The Brundtland Commission

"**Sustainable development** is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

It contains within it **two key concepts**: the concept of 'needs,' in particular the **essential needs of the world's poor**, to which overriding priority should be given; and the idea of **limitations** imposed by the state of technology and social organization **on the environment's ability to meet present and future needs**."

United Nations World Commission on Environment and Development, Our Common Future, Report of the World Commission on Environment and Development (1987).

1990s

- AIA formed its **Committee on the Environment** in 1991, and has been instrumental in expanding the focus of sustainability from simply **energy consumption** to looking at a wide range of influences – such as **life cycle impact, materials selection, indoor air quality and resource conservation.**

U.S. Green Building Council

- Created the first objective measure of sustainable design and construction, known as “Leadership in Energy & Environmental Design” or **LEED® Certifications**
- The U.S. Department of Energy partnered with AIA and USGBC to begin recognizing exemplary green design in its **Top Ten Green Projects Program**

The Past Decade

- Urban planners pick up on sustainability and create “**Smart Growth**” new urbanism concepts
- The U.S. Government mandates exploration of “green” construction alternatives and from them, **guiding principals of sustainable design** are adopted
- The **first sustainable housing communities** are launched worldwide
- Universities begin offering **undergraduate and graduate degrees in sustainability** for single design disciplines as well as part of broad interdisciplinary systems and construction management degrees
- Movement from neutral footprint concepts to exploring restorative and whole system regenerative design

GSA’s “Assessing Green Performance: Post-Occupancy Evaluation”

- **The first objective metrics about sustainability on a broad range of new and renovated buildings (2008):**
  - 12% **less cost** than comparable buildings
  - 54% **less water** usage
  - 8-9% **lower operating costs**
  - 7.5% **higher building values**
  - 3.5% **greater occupancy** ratio
  - 30% **energy use reduction**
  - 34% **greater user satisfaction**

What does "sustainable" mean?

- **Terms like "environmentally-friendly," "environmentally-conscious," "restorative," "green," "eco-tecture" and "environmentally-sensitive" are used interchangeably with the concept:**

sustainable

An evolving design and construction discipline with no industry-wide, acknowledged definition.

How to Contractually Measure Sustainability and Develop Meaningful Standards of Care For its Use?

Start by creating a **definition of sustainability** based on the needs and goals of the specific project, recognizing the bias of the different industry groups driven by the unique philosophy and approach underpinning their use of sustainability measures.

Compare this design textbook definition influenced by biomimicry concepts…

"Sustainability is . . . a design philosophy that seeks to maximize the quality of the built environment, while minimizing or eliminating negative impact to the natural environment."

Jason F. McLennan,
The Philosophy of Sustainable Design

…with a definition created by a macrocosm/city planning group:

"Sustainable design . . . [is] an approach to design based on natural-systems functioning. . . .To design sustainably is to integrate the design into the ecology of the place – the flows of materials and energy residing in the community."

…along with this university/industry/government partnership definition:

"Sustainable design is a collective process whereby the built environment achieves new levels of **ecological balance** through new and retrofit construction, towards the long term viability and humanization of architecture. Focusing on environmental context, sustainable design merges the **natural, minimum resource conditioning solutions** of the past (daylight, solar heat and natural ventilation) with the **innovative technologies** of the present, into an **integrated "intelligent" system** that supports individual control with expert negotiation for **resource consciousness**. . . .

Sustainable design introduces **benign, non-polluting materials and assemblies with lower embodied and operating energy requirements, and higher durability and recyclability**. Finally, sustainable design offers architecture of long term value through **'forgiving' and modifiable building systems**, life-cycle instead of least-cost investments and **timeless delight and craftsmanship**."

Inspiring Stuff =
Objective Contract Definition??

To select from the abundant, trade group-specific, subjective concepts and create an objective definition of sustainability:

1) Examine how the group arrived at sustainability as a desirable goal and their philosophical biases regarding its use

2) Refine the definition of "sustainability" by articulating the desired end uses/goals to be achieved for the specific project

"Find Someone Doing it Right . . ."

"The **basic objectives of sustainability** are to **reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments.**

Sustainable design principles include the ability to:

- **optimize site** potential;
- **minimize** non-renewable **energy consumption**;
- use **environmentally preferable products**;
- **protect and conserve water**;
- enhance **indoor environmental quality**; and
- **optimize operational and maintenance** practices.

. . . it is an integrated, holistic approach that encourages compromise and tradeoffs. Such an integrated approach **positively impacts all phases of a building's life-cycle**, including design, construction, operation and decommissioning."

U.S. General Services Administration

Articulating Sustainability Standard of Care

Three Useful Tools:

1) Contract Forms
2) Industry Group Checklists/Criteria
3) Building Codes/Ordinances

1) Contract Forms

- **American Institute of Architects B101 (2007) Standard form of Agreement between Owner and Architect**
  - Does not mention the word "sustainable"
  - §3.2.3 requires a preliminary evaluation with Owner, including discussion of "the feasibility of incorporating **environmentally responsible design** approaches . . ." (EDR)
  - No definition of ERD or standard of care

AIA B201 Architect Agreement

- An additional new obligation:
  §3.2.5.1 Architect shall "consider **environmentally responsible design alternatives, such as material choices and building orientation**, together with other considerations based on program and aesthetics, in developing a design that is consistent with the Owner's program, schedule and budget . . ."

AIA Contracts

- Create a mandated performance requirement but given limited guidance about necessary considerations to achieve "environmentally responsible design"
- Treats "extensive environmentally responsible design" and "LEED® Certification" as Additional Services - §§ 4.1.23, 4.1.24

AIA B214 LEED® Certification Addendum

- **AIA B214 (2007) Standard Form of Architects Services: LEED® Certification**
  - Again, no separate standard of care
  - Reiterates the LEED® submittal process with presumption that Architect is party creating Certification Plan and submitting paperwork for rating by USGBC

ConsensusDOCS™ 310

- **Green Building Addendum (2007)**
  - "Project Participants" collaborate to create a plan to undertake "Green Measures" necessary to permit the Project to achieve "Green Status"
  - Intended for use with existing sustainability metrics like **LEED®**, **Green Globes®** and **SB Tool®** Certifications

ConsensusDOCS™ 310

- **Also sidesteps standard of care issues:**

> "1.4 Nothing in this Addendum shall relieve the Architect/Engineer from its obligations or responsibilities, whether under the Governing Contract or applicable law, except to the extent expressly provided herein.
>
> 1.5 Nothing in this Addendum shall relieve the Contractor from its obligations or responsibilities, whether under the Governing Contract or applicable law, except to the extent expressly provided herein. . .
>
> 4.3 Owner has satisfied itself that the GBF [or Green Building Facilitator, i.e., the party that coordinates and facilitates the process of obtaining Green Status for the project] has sufficient skill and experience to effectively and timely perform the role of GBF as required under this Addendum, and GBF hereby represents to Owner that it has such skill and experience."

2) Industry Group Sustainability Factors & Checklists

- **AIA/COTE** – Award System (10)
- **US General Services Administration** – Performance Goals (5)
- **SBIC** – Beyond Green High-Performance Building Awards (9)
- **LEED® New Construction & Major Renovations** - Certifications (7)
- **GreenGlobes®** - Rating System (19)
- **iiSBE** – International Rating System (multi)

3) Sustainable Building Codes

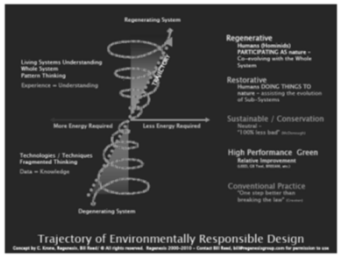
- CALGREEN Green Building Standards Code
- San Francisco Green Building Ordinance
- Green Built North Texas (GBNT) Program
- Smart Code Central
- ICC/ASHRAE/USGBC/IES
  - International Green Construction Code (v. 1)
  - August – Public Review/Commentary Sessions

Expand Industry Contract Form Obligations:

- Add provisions that --
  - Require consideration of factors from Trade Group Checklists
  - Achieve compliance with Building Code or Ordinance requirements
  - Set incentives for achieving or exceeding performance measures

Trajectory of Integrative Thinking

- Sustainability is fast becoming the norm for design and construction excellence



QUESTIONS?

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