Integral Sustainable Design: transformative perspectives

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Integral Sustainable Design

Transformative Perspectives

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with Susanne Bennett, editor

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Acronyms and Abbreviations

AQAL All-Quadrants, All-Levels
ASHRAE American Society of Heating Refrigeration and Air-conditioning Engineers
CRS Center for Regenerative Studies
FSEC Florida Solar Energy Center
IEQ Indoor Environmental Quality
I-I Integral Institute
ISS Institute for Sustainable Sites
LEED Leadership in Energy and Environmental Design
LEED-NC LEED for New Construction and Major Renovation
LL lower left quadrant
LR lower right quadrant
NIBS National Institute of Building Sciences
SITE Sculpture in the Environment
UL upper left quadrant
UR upper right quadrant
US EPA United States Environmental Protection Agency
USGBC US Green Buildings Council
VOC volatile organic compound
WBDG Whole Building Design Guide

Preface

My intention in writing this book is to help create a breakthrough in the effectiveness of the Sustainable Design movement such that it is transformed to greater power, relevance, meaning and positive effect on people and Nature.

This book is probably unlike any other book about Sustainable Design that you may have encountered before now. The vast majority of works take a technical view of Sustainable Design in which performance is the primary value. This book transcends and includes the technological view in a deeper and wider perspective, defining for the first time an Integral Theory of Sustainable Design, one that is more satisfying and more effective.

In Nature, form always performs.

For some decades now, the design disciplines have been mired in adversarial distinctions, such as ‘art versus science’, ‘design versus technology’ and ‘analysis versus creativity’. Perhaps because of the dominance of empirically based sustainability perspectives, and the culturally predisposed listening that many of us have for it, designers commonly equate sustainability with technology and sustainable technology with quantifiable energy efficiency or its visible hardware, such as photovoltaic collectors. To be certain, there have been notable exceptions to the tendency to reduce Sustainable Design to the objective value sphere or to mere performance. However, while Sustainable Design is increasingly associated with performance measures, the wider profession is increasingly ideologically pluralistic. Despite this pluralism, the design fields, and Sustainable Design in particular, seem to have no collective framework for navigating and transcending the fragmentation that entrenches both academia and practice, locks intellectual camps into epic battles and confounds most of us in the design community to no end.
Much of sustainable or ‘green’ design, such as the approach exemplified by the US Green Building Council’s (USGBC) programme for Leadership in Energy and Environmental Design (LEED), as worthy as it is, is based on an objective-only approach. Subjective perspectives are mostly missing. As an example, there are no LEED credits for creating experiences of beauty, none for creating or fitting to ecological order, and none for placing people into rich symbolic relationships with Nature. They are just not sufficient for the much-expanded idea of sustainability that this book explores.

In the same way, environmentalism based on scientific rationalism has not been very effective. The message goes something like this: ‘Look, we have the facts … the sky is falling, we’re running out of everything you need, the climate is going wacko and Al Gore has pictures of the polar caps that should scare the pants off of all of us.’ Well, if that does not work to get our collective selves in action, statistics about the contribution of buildings to landfill waste, water consumption and CO₂ production probably will not work too well either – when that’s the only argument we are making.

This book presents an Integral Theory of Sustainable Design by turning the eye of the Integral Model on the subject of Sustainable Design. It proposes that integral designs for sustainability are found in considering multiple levels of developing complexity – in the intersecting domains of self, culture and Nature. Integral Theory itself is a meta-theory, a network structure of other valid theories from multiple domains of knowledge. Its primary offering is that the world is disclosed differently depending on the perspective taken and that many perspectives are necessary to get a whole and complete understanding of the world, or even to fully grasp any particular occurrence. As such, it uses two primary frameworks (expanded later in this preface):¹

1. The four perspectives, which arise from fundamental distinctions of value found in language (I, We, It) and represent the methods of the arts, humanities, basic sciences and the complex sciences.²
2. Levels of complexity, which arise from the unfolding sequence of development in human individuals, cultures and physical systems, which manifest as developmental sequences such as those for values, cognition, biological evolution, economic systems and worldviews.

Difficult and dangerous terrain calls for a more sophisticated map and a more highly developed map-reader.

This book outlines a new, rigorous theoretical and practical approach to understanding Sustainable Design. Though the concepts covered are fundamental to fully fledged Sustainable Design, they may challenge the reader. This book is not designed to deepen specific knowledge about sustainable technologies topics. Instead, it places technological sustainability (such as LEED) into its larger context of ecological sustainability, experiential sustainability and cultural sustainability, and thereby helps one to better understand both the

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¹ The four perspectives
² Levels of complexity
technical perspective and the other non-technical perspectives on sustainability. As such, it provides the possibility for practitioners to communicate with and better understand the design team members who are not working with the purely technical aspects of Sustainable Design.

This book covers all of the major classes of approaches to thinking about Sustainable Design. An Integral lens will be used to view Sustainable Design from four fundamental perspectives:

- **BEHAVIOURS PERSPECTIVE** (the what of individual parts);
- **SYSTEMS PERSPECTIVE** (the how of complex wholes);
- **EXPERIENCES PERSPECTIVE** (the who that intends, thinks and feels);
- **CULTURES PERSPECTIVE** (the why of the collective we).

In doing so, the Integral approach offers the designer the potential for a better map of the Sustainable Design terrain.

**A Short Primer on Integral Theory**

Contemporary Integral Theory, especially as outlined in the works of Ken Wilber (2000a, 2000b), attempts to create a comprehensive framework for understanding the complexity of multiple, competing theories, methods and products of any human knowledge domain. It begins with the assumption that everyone is right – at least partially – and fashions an intellectual framework that both transcends and includes differences. Simply put, an Integrally informed approach to design (or anything else) challenges us to hold multiple simultaneous perspectives and to address development in each major value sphere, including different levels of awareness across the spectrum of human development. Integral Theory is a model that could help design educators and practitioners reconsider the scope, breadth and multifaceted aspects of sustainability. It is based on a cross-cultural comparison of human knowledge, experience and inquiry (Wilber, 2000a, 2000b).

Integral Theory advocates a comprehensive approach, often called All-Quadrants, All-Levels, or AQAL for short, that potentially takes into account in addressing any situation the factors of (Wilber, n.d.):

1. **All quadrants** (the matrix of four primary value spheres: Experience, Meaning, Behaviours and Systems). Within each quadrant:
   1. **All levels** of developmental depth and complexity, such as the development of human consciousness, the evolution of organisms, political structures, cultural worldviews, etc.
   2. **All lines** of development (such as the lines of development of cognition; brain physiology, engineering structures, group ethics, etc.)

2. **All states** of being (such as people's normal and altered states, phase and thermodynamic states of matter, states of weather systems and forest succession, states of collective consciousness, etc.)

3. **All types** (such as human masculine and feminine types, biological morphologies, ecosystem and biome types, types of cultural contexts).

While this may sound extraordinarily complicated, the hypothesis is that this is about the simplest model that can account for or map the complexity of humans and their universe. Proponents of Integral Theory aspire to create a common map of ‘orienting generalizations’.

**Quadrants: The four fundamental perspectives**

At its most essential level, Integral Theory organizes variables for any problem into a matrix of quadrants that intersect individual and collective phenomena with objective and subjective knowledge. These combined variables reveal the following considerations:

1. **Experiences**: self and consciousness;  
2. **Behaviours**: science, mechanics and performance;  
3. **Cultures**: meaning, worldviews and symbolism; and  
4. **Systems**: social and natural ecologies and contexts (see Figure i.2).

The four quadrants – which are the four fundamental perspectives on any occasion (or the four basic ways of looking at anything) – turn out to be fairly simple: they are the inside and the outside of the individual and the collective (Wilber, n.d., p25).
The four quadrants are not separate phenomena, but rather four simultaneous perspectives on any event. For this reason, and others that become clear later in this book, I will use the term perspectives in place of quadrants. Each quadrant or dimension of reality is ever-present and co-arises with the others. From the Integral point of view, all are necessary for a more complete understanding.

Philosopher Michael Zimmerman notes that:

The quadrant perspectives correspond generally to the four ways in which universities divide research methodologies (that is, truth-claim generating practices or paradigms): fine arts (UL), humanities (LL), natural sciences (UR), and social and systemic natural sciences (LR).7 (Zimmerman, 2004)

Often the two right-hand quadrants, both objective, are considered together in a shorthand way as one, yielding three value spheres, associated with Self (UL), Culture (LL) and Nature (UR/LR), or alternatively, Art, Morals and Science. Wilber refers to these as ‘The Big Three’, noting that each domain can be associated with the fundamental language distinctions of I, We, and It/Its, or first, second and third person perspectives (see Figure i.4). This indicates that the perspectives are not opinions or speculative theory, but rather, are so fundamental as to be embedded in natural languages. The Big Three are the classic value domains of Beauty, Goodness and Truth.

The point is that every event in the manifest world has all three of those dimensions. You can look at any event from the point of view of the ‘I’ (how I personally see and feel about the event); from the point of view of the ‘we’ (how not just I but others see the event); and as an ‘it’ (the objective facts of the event) (Wilber, n.d., p24).

Figure i.4 Integral Theory’s four quadrants simplified to the ‘Big Three’
Source: Integral Institute

States and levels (structures)

One of the fundamental realities of being human is that we can experience a variety of states of consciousness that arise and disappear, blending and changing from one to another to another. The three major states we are all aware of and have access to every day are waking, dreaming and deep sleep. There are also meditative and altered states and a spectrum of variations on each of these categories, such as emotional states, peak experiences and states of heightened creativity, insight or awareness. Each of these is typically a temporary experience. However, levels (structures) of consciousness are permanent acquisitions. Any state can occur at any structural stage, but in themselves, states do not provide a context of interpretation for wisdom. Integral Theory characterizes the difference between states and stages as ‘temporary states versus permanent traits’. In design we have creativity states, flow states, contemplative states, the state of being ‘one’ with the project, etc.

Humans in many domains of life grow and develop over time through a sequence of predictable sequential stages or levels of structural development. Once a level is achieved the awareness or abilities of that stage do not disappear unless the body’s cognitive hardware is damaged or wears out. This assertion is borne out by hundreds of developmental researchers across a wide range of fields: the increasing complexity of biological evolution, Abraham Maslow’s hierarchy of needs, Jean Gebser’s epochs of worldviews, Don’ Beck’s ‘spiral dynamics’, the progressive development of monetary exchange systems, Aurobindo’s spiritual stages, the life cycle of organisms, Alistair Taylor’s stages of social organization and so on.
Several characteristics of developmental stage conceptions seem to be universal to all systems:

- The same developmental characteristics can be investigated using different scales or subdivisions, just as the architect’s scale, based on multiples of 12, and the engineer’s scale, based on multiples of 10, both measure distance on a site plan.
- Each progressive level transcends and includes its predecessor. It is not necessarily better, but is more inclusive, deeper, more embracing and for individuals, more expansive in its awareness.
- Lower levels are fundamental to higher levels. Stages cannot be skipped.
- Higher levels organize relationships of lower levels. Complexity increases.
- Stages are like overlapping waves or ‘probabilité clouds’, not like discreet levels in a building.
- Each level has light and dark expressions and can have both healthy and unhealthy expressions.
- Any state is theoretically possible at any level.

Each structural stage represents a level of increasing complexity with identifiable emergent qualities of its own. In biology (the sequence of atoms, molecules, cells, organs, organism) each new level is more complex than its predecessor, includes the predecessor within it and exhibits new characteristics and behaviours not found in the lower level. Integral Theory often uses stage conceptions such as those of orders of consciousness developed by Robert Kegan, self-development in the work of Jane Lovinger and Susanne Cook-Greuter, and values in the Spiral Dynamics system of Don Beck and Christopher Cowan. We will look at some of these in more detail in Part II.

**Levels and lines in Integral Theory**

Levels are always levels along a particular line of development. People can be good at different things. We are all unevenly developed, better at some things than others. There are two dozen or more lines of development for different researched, replicable measurable human potentials, such as lines for worldview, self-conception, morals, values, cognition, mathematics, music and so on. Each line has stages or levels. These stages emerge in a predictable one-way sequence across cultures. Human development unfolds. Howard Gardner’s research on multiple intelligences is a good example of levels along multiple lines, in which he finds that people can have a musical intelligence, a kinesthetic intelligence, emotional intelligence and so on. The psychograph diagram (Figure i.5) is an easy way to visualize this.

In addition to the four quadrant perspectives and the stage-wise development of humans through levels, Integral Theory recognizes that all four quadrants show growth, development or evolution, exhibiting stages or levels as unfolding waves. Each quadrant has levels of complexity and depth. As a simple example, we can consider a developmental system with three levels of complexity along one of many potential developmental lines in each quadrant. In the Behaviours quadrant (UR) bodily structure expands from gross to subtle to causal. In the Systems quadrant (LR) social systems expand from simple groups to complex systems to global systems. In the Cultures quadrant (LL) collective values develop from egocentric to ethnocentric to worldcentric. In the Experiences quadrant (UL) the individual sense of self unfolds from body to mind to spirit. When these three levels of development are overlaid on the four quadrants we get the Integral Institute’s diagram in Figure i.6.
As the quadrants co-arise and describe multiple views of the same object or event, development in one quadrant is correlated in the other quadrants. For instance, Gebser’s development of the worldviews line in the lower left quadrant is correlated with emerging structures of individual consciousness in the upper left and with the developmental sequence of social/economic systems in the lower right: foraging, horticultural, agrarian, industrial, informational.

As an example, Figure i.7 shows correlates in the four quadrants for humans and their collectives:

- At developmental level 2 (UL) conceptual thought arises in the magical self.
- It is correlated with the evolution of a complex neo cortex in humans (UR), which makes such thoughts possible.
- As these capacities are exhibited widely, people are organized socially into ethnic tribes and villages (LR).
- People in these societies tend to hold an animistic–magical collective worldview (LL).

**Types**

Types are ‘horizontal’ typologies, that is, they do not distinguish developmental levels but do describe varieties of identifiable pattern. Examples include masculine/feminine types, yin and yang and Myers-Briggs personality types. Types occur at every level. For example, the masculine and feminine types can be identified at every level of human development on the line for sense of self. At higher levels, the self is more conscious of types and more able to integrate them, exhibiting and increasing choice about and union of masculine/feminine qualities and expressions. In design, Integral Theory’s understanding of types gives us a different take on gender issues, masculine and feminine space, building types and design typology. This book will not address types in depth.

*Integral Design is the theory and practice of design phenomena in the four perspectives at all levels of complexity.*

**Integral Theory and design**

An Integral approach to design is one that unites the beautiful, the art of design, and the good, the ethics of design, with the true, the science of design. We can also think of design as having four primary dimensions (the four perspectives of the quadrants), each requiring different perspectives on the practice and products of design:

1. **Systems perspective:** patterns of form that order ecological and social relationships;
2. **Behaviours perspective:** individual parts or members with their performance, activities, and functions;
3. **Experiences perspective:** systemic members (human and non-human) with various forms of perception, sentience, and awareness;
4. **Cultures perspective:** shared meaning and understanding at various levels of complexity arising from individual members interacting with each other.

In this book, I identify that most of contemporary Sustainable Design is focused on issues and methods from the **behaviours perspective**, which constitutes a reduction to ‘flatland’. High performance design typically collapses everything to the upper right quadrant. Green, ecological approaches collapse reality to the lower right quadrant, or to the right side of the four-quadrant matrix (the web of life). Wilber calls this *subtle reductionism* as contrasted with the *gross reductionism* of the upper right. But where are the interiors? This book is designed to tease out the roots of each perspective on Sustainable Design and to posit ways to create a more holistic, all-quadrant Sustainable Design.
A more comprehensive map of design emerges if we intersect the four perspectives with a system of developmental levels in each perspective. Thus, Integral Design is the theory and practice of design phenomena in the four perspectives at all levels of complexity. In Part II, we term these intersections prospects as the view from each intersection of level and perspective discloses Sustainable Design differently. No prospect of any level occurs without the other prospects of that level in other perspectives. The four prospects of every level arise simultaneously, because each prospect of a level is a different aspect of the same phenomenon. As it turns out, each prospect requires different methods of inquiry, different design, analysis and evaluation methods.

This may sound confusing on the front end of the book, but these logics as they apply to design will all be unfolded in the coming chapters. When we are able to see and consciously distinguish different ways of seeing the world, it allows us to inhabit other people’s perspectives. Much as putting on a new pair of glasses alters our vision, the Integral Designer can increasingly take other perspectives and acknowledge and validate important aspects of those perspectives. To be operating as Integrally informed does not mean you have to be a super-genius who knows everything, understands everything and therefore includes it. It does mean that at the very least you are not trying to purposefully exclude or marginalize other potentially valid views. You actively seek to understand and inquire into other perspectives and truths in your design practice.

The Author’s Perspective

I assert that practising working with the ideas in Integral Sustainable Design can create a breakthrough in your ability to share your contribution to Sustainable Design. Not too long ago, I encountered Integral Theory primarily as expressed in the work of Ken Wilber. This broad integrating perspective, combining levels of development and multiple perspectives, underlies much of this book. The view presented here is not the truth about Sustainable Design; rather it is one that takes in multiple views. That it can enlarge your perspective is an understatement, and I encourage you to ‘try it on’ for the remainder of the book.