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**Topic:** Integrative and Regenerative Design: a lesson plan inspired by artist Michael Singer.

### **Objectives**

To introduce key concepts of Integrative and Regenerative Design to architecture students in order to open opportunities for possibilities for joining public works projects to aesthetic concerns in order to meet the needs of the communities they serve.

### **Definitions**

**Regenerative Design:** - sometimes referred to as 'Cradle to Cradle Design' - "is a process-oriented systems theory based approach to design. The term 'regenerative' describes processes that restore, renew or revitalize their own sources of energy and materials, creating sustainable systems that integrate the needs of society with the integrity of nature."

**Regenerative versus Sustainable:** "Regenerative and Sustainable are essentially the same, except for one key point: if the world were to become regenerative or sustainable, under the term sustainable, lost ecological systems are not returned to existence. Under regenerative, those lost systems can ultimately begin 'regenerating' back into existence."

**Integrative Design Process:** The Integrative Design Process is a key strategy in designing high performance green buildings, encouraging synergies among all systems and potentially downsizing building systems. This process requires a greater level of participation among all disciplines early in the design process than does a traditional process. Because it brings all members of the design team together to develop the project as a team, the process may require more resources earlier in a project. However, the end result is likely to be a better more cost effective product. This process also makes significant use of tools, such as building performance simulation and life cycle analysis, applied early in the design process.

The Integrative Design Process is a collaborative method for designing buildings which emphasizes the development of a holistic design. It requires multidisciplinary collaboration, including key stakeholders and design professionals, from conception to completion. Decision-making protocols and complementary design principles must be established early in the process in order to satisfy the goals of multiple stakeholders while achieving the overall project objectives.

In addition to extensive collaboration, Integrative Design involves a 'whole building design' approach. A building is viewed as an interdependent system, as opposed to an accumulation of its separate components (site, structure, systems and use). The goal of looking at all the systems together is to make sure they work in harmony rather than against each other.

The Integrative Design Process has evolved in conjunction with the rise of multidisciplinary design firms and sustainable design.

## **Procedures**

Using the following procedures - based on Integrative *Design Collaborative, Regeneration, Inc.* resources - we will develop an understanding of how buildings, habitat, and people can contribute to 'the health of the whole' over time. The objective is to align human activity with the nature of place – the process asks how we can be participants with the place – not limiting ourselves by assuming we can only do something to the place.

Understanding and aligning human aspirations of a project. To understand the objectives of a project, it is necessary to understand the core drivers of why the project is proposed in the first place and what people value and perceive as significant about the place they inhabit. Questions about what is driving this project, what is important to the client and design team are elicited in a dialogue process.

Understanding the patterns of evolution and health. In order to address the health of an ecosystem and our role in it, we need to understand how it works and how humans have interacted with it through history. This knowledge gives us the opportunity to identify the key systems in a place that made it work more effectively in the past and may provide new opportunities in the future – particularly in alignment with current aspirations of the people in that place.

Expressing the relationships in the form of a “story of place”: to more quickly engage the layperson in an understanding the complex relationships in an ecosystem and their role within it. The story of place as a context serves multiple purposes. First, history has shown that we will not sustain the will needed to make and maintain the needed changes, day after day, without evoking the spirit of caring that comes from a deep connection to place. Second, discovering the story of a place enables us to understand how living systems work in a particular place, and provides greater intelligence about how humans can then align themselves with that way of working to the benefit of both. Finally, the story of place provides a framework for an ongoing learning process that enables humans to co-evolve with their environment.

Establishing a foundation for design. From the outcomes from the steps above a foundation for design will be established. The design team will respond to real issues of the environment and the aspirations of the people in relation to the opportunities in the ecosystem. The design team will hold the aspirations in relation to the health of the place and project. This is the design phase where conceptual design begins.

Supporting the establishment of the health of the whole as well objectives. Design work will support the establishment of the health of the whole as well objectives. The process of optimizing each system and part in relation to the whole requires more than a few interactions of thinking.

## **Resources**

"The Integrative Design Guide to Green Building: Redefining the Practice of Sustainability" by 7group and Bill Reed, 2009, Wiley & Sons.