ANFA 2014 CONFERENCE

PRESENTER ABSTRACTS

ACADEMY OF NEUROSCIENCE FOR ARCHITECTURE

Speaking Space: Developing a Cognitive Language for Architects

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1. ABSTRACT

Goals

1. Describe, for neuroscientists and architects, an evolving approach to influencing architectural training through an understanding of neuroscience.
2. Describe the enhancement of traditional architectural design can be modified and enhanced by integrating neuroscience.
3. Clarify the common underpinning of art, architecture and neuroscience as it relates to architectural design and experience.

Summary

Graduate architecture students in a course titled Beauty & Brains learn about architecture and neuroscience in theoretical and practical terms, fostering significant changes in attitude, analytical assumptions, design process and philosophy. They learn and rehearse a design process parallel to, and in contrast to, traditional design methodology. Architecture and neuroscience together open the door to an alternative way of looking at architectural experience. It is a rich source for understanding and one that appeals to the interests and appetite of graduate level architecture students. The course weaves together neuroscience, environmental psychology, theories of art and theories of architecture. An integrated view develops from an understanding how the senses operate in humans, how perception organizes sensory information, how cognitive process connects perception to meaning, and how action, from an architectural viewpoint, is triggered. "Artistic Tension" is defined cognitively. The notion of "comfortable environments" is explored. In these areas, there is connection with the keynote speaker, Juhani Pallasmaa. A related project, the Design of a House for a Blind Composer, will be given a brief introduction. The design precluded use of visual cues and relied instead on other senses for architectural effectiveness. A side-by-side comparison between traditional (form-driven) and neuroscience-oriented (experience-driven) architectural design processes will be presented.

Course Components

- » An introduction to neuroscience and cognitive process as they relate to the experience of architectural space and form
- » An introduction to cognitive theory derived from an evolutionary perspective
- » Investigation of primary aesthetic issues, also from an evolutionary perspective
- » A theoretical approach to incorporating neuroscience into architectural thinking, in abstract, practical and historical terms
- » Development of a language of design addressing cognitive and affective elements of responsive design solutions

Examples of significant buildings will be provided, citing them as examples of cognitively responsive design, along with student work. Academic

2. AUTHOR BIO

Academic

The Catholic University of America, Adjunct Associate Professor. Teaching, since 1977, studio courses from the two-semester freshman course through Thesis, as Visiting Critic, Studio Master and Thesis Chair, as well as creator of required non-studio courses. The latest course is Beauty & Brains, an advanced theory graduate level elective. This course grew out of the development of a freshman architecture program. During research for that course, the author, dissatisfied with the traditional Basic Design curriculum, investigated art theory. The course was profoundly changed after finding powerful insights in the writings of E.H. Gombrich and Rudolph Arnheim, moving from pure design exercises to investigation with the students into

the cognitive basis of architectural experience and architectural design. The author's long interest in science and medicine supported and helped motivate a search for a productive meeting place between architecture, science, art and design process.

PROFESSIONAL

Shinberg.Levinas Architects Founding Principal. Has led the design of approximately two-million square feet of educational environments from birth-age through higher education. A core element of these projects is an ongoing search for ways to organize and shape space to resonate with the needs and goals of each educational program beyond normative program quantifiers. Investigation of qualitative requirements, through words and images has been integrated in initial ideas and development of design ideas. Lessons learned in teaching the perception and cognition of architectural space have been applied through these projects.