Scale and color

At the present time, design studios typically train students by asking them to make models at a scale that is too small. Such models do not reveal the design across a wide perceivable range of scales, or the experiential problems that would be present in that structure. The model teaches students to regard a building as an object, as a thing with a particular form on the largest scale. It reveals little about how the construction has generated the building. As a result, models are now judged by criteria such as: unnatural form, conformity to the latest architectural fashion, conformity to the machine aesthetic and technological appearance, or how dissimilar it is to traditional buildings. These criteria are irrelevant to how the actual built structures will perform as buildings.

Students fall into a false world of visual representations that substitutes for reality. There is a very tenuous connection between a model and a building, yet students are trained exclusively to create the former. It is therefore necessary to train students in experiencing effects of form and surface on a larger, near REAL or ACTUAL scale. Build mock-ups using Styrofoam, cardboard panels, wire, sticks, cloth, etc., and adjust those structures to optimize perceived feedback. Then go back and revise the drawings and miniature model to capture the observed physical effect experienced on the large scale. As with all exercises that utilize full-scale models, these are best accomplished through group effort. Architecture is not the exclusive domain of one person’s ideas, so students must learn to work together on design: holding their egos in check while trying to realize the universality of human physiological perception.

The current situation is even more inadequate for understanding the architectural use (and misuse) of color. Minimalism eschews color, leading to drab and depressing surfaces and interiors. With few exceptions, a minimalist design ideology does not create very pleasant/joyful environments. The proscription of
color goes back to extreme political and pseudo-philosophical tenets of the early twentieth century, yet those unfounded ideas continue to be taught in architecture schools today. Few people know that the primary colors used by modernist architects came from the dictates of a religious sect (Salingaros, 2014: page 82). If color is used within the industrial model, it is often as an arbitrary artistic gesture, without any understanding of human emotional response to the color experienced in a real building. When present, colors are sometimes harsh and arbitrary, not meant to enhance the geometry and achieve coherence.

Interior designers eventually have to learn about color on their own. There is a wealth of data obtained by experimental psychologists on color, and it is important to use that information in design studio. Commercial advertizing depends on the strong effect that colors have on human beings. The best reference on achieving human wellbeing via harmony in architectural color is Chapter 7 of Christopher Alexander’s “The Luminous Ground” (Alexander, 2004). As in the above discussion, it is impossible to judge the effects of color unless experiments are undertaken at full scale. The experience cannot be reproduced on a play model or on a computer screen.

**Architectural space**

Architectural space is arguably the key concept in all of architecture, yet it is woefully misunderstood. How to create experientially-useful space is certainly not taught in any satisfactory manner today. Nor do we know by what criterion it would be considered successful. Several authors are involved in researching how to conceive of architectural space that is experienced with positive emotions, as judged by the appropriate scientific criteria. Architectural space — the space we make when we build buildings — is formed as a material volume containing human beings and their perceptive fields. The inhabited, perceived volume itself should determine the design of the material structures that bound that space, and not the other way around.

Unfortunately, we have to do battle with the decades-old expediency of treating architecture as a strictly two-dimensional design problem, teaching at best two dimensions plus one. Since the beginning of the twentieth century, teachers have either emphasized the building’s external elevation, downplaying both the interior volumes and the exterior urban space, or they have concentrated on the plan, relying upon the silly idea that “the plan is the generator of the entire design”. The volume is then simply the vertical extension of the plan: a method that denies design in the vertical dimension altogether! Neither approach teaches a student how to generate intelligent, connective space. Students can learn to create useful architectural space only by experiencing it on the real scale.

Our goal is to offer the tools to imagine “how can I generate a space in which I feel most alive?” — the definition of wellbeing — and to be able to generate living structure that nourishes human beings. Virtual models have their uses, but the danger is that they cannot show the information field. The architectural experience
is real and emotion-based, and its essential qualities — as opposed to its formal
ones — are almost impossible to judge on a computer screen. We encourage
architects to delve more deeply into the informational geometry of their design.
Knowledge of Biophilic Design is a pre-requisite. Architects should aim at
generating living structure in their projects.

Having mastered the technique of documenting “how do I respond emotionally to
this design?” students will move on to its more challenging corollary: “what space
and texture will produce this particular emotional response?” Different techniques
will apply to the same project, helping to develop different aspects of it. Final design
decisions in a project will be facilitated via the usual pin-ups of drawings and
presentation of models, but the criteria for judgment will be those according to how
closely the result follows the logic of adaptation, and whether a particular design
satisfies certain positive informational qualities. After learning experimental
techniques of objective judgment from Biophilic Design, designers can then apply
them to the final analysis of their projects.