Chairs: A Study in High School Architectural Design

by Robert Meredith

Le Corbusier's lounge, Mies van der Rohe's Barcelona, Rietveld's Zig Zag, Charles and Ray Eames' LCW, and Gehry's Hat Trick –- these are all classic chairs made by architects that have become clarified expressions of architectural design. They seem to be a concentrated link between the architect's building and the human. Chairs comfort, support, enthrone, and excite. So many architects have been compelled to make chairs for their buildings as a functional extension of the architecture itself. One only has to look at Frank Lloyd Wright's Johnson Wax chair to understand that the same conceptual ideas are present in the chair itself as those found in the building.

Chairs have evolved over millennia, exploring a variety of permutations, materials and forms. Who has not been "invited" to sit down when confronted by an extraordinary chair? Designers, architects and craftsmen through history have reworked the seating formula in an attempt to engage the mind and comfort the body in the hope of creating a new classic.

This common appreciation of chairs is precisely why I decided to offer a design assignment to my high school Advanced Architecture students as a most compelling way to engage them in translating the concepts of building to the personal level. My advanced architecture students have all previously had a year's experience with **form•Z**. Their knowledge of the software's fundamental tools as it pertains to making architecture is at an intermediate level. During the chair assignment they have an opportunity to expand their range by experimenting with more organic modeling, texture mapping and lighting. This vocabulary is accessible in new ways with the software.

There is always immediate attachment to this assignment. Everyone in the class believes that they know exactly what makes up a successful chair and wish to express their opinions on the subject. I begin the project by trying to reshape preconceived ideas and introduce students to the variety of chairs formed throughout history. I then ask students to research one particular chair they find engaging. Students offer a brief class presentation accompanied by images of their selection. With each presentation, elements of good design, form and function, proportion, and material are discussed and evaluated for their strengths and faults in order to determine the salient elements that make up a fine chair. Once students have this knowledge base, they begin to design their own.

For the chair assignment, I prefer to have students work between drawings, sketch models of corrugated cardboard and wood, and 3D computer models. Students begin by generating ideas in the sketch model, developing a sense of form, function (comfort) and proportion by using an articulated artist's mannequin for scale. From here students move to the computer to refine their concepts and further articulate their designs. Most find this method of working from paper, to model, to computer a natural evolution for the development of their ideas. **form•Z** makes it possible at each junction for students to manipulate their components much more easily within the framework of technical and practical constraints. This goes beyond the obvious facility to visualize changes and has an impact on the way students can imagine changes in three dimensions.

What remains most impressive to me about this assignment is the variety of personal expression that can come from the class. This particular year brought out chaise lounge chairs, bar stools, futuristic task chairs with computer components sandwiched between glass sheets (figure 1 & 2) and organic "twig" chairs reminiscent of Adirondack stick chairs generated a century ago (figure 3).

Figure 1: **Brian Lehrer, Computer chair**

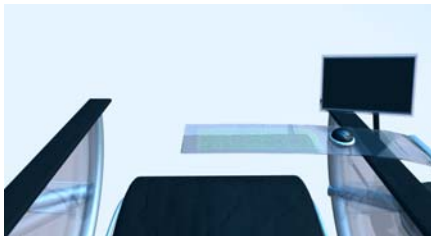

Figure 2: **Brian Lehrer, Computer chair (detail)**

Figure 3: **Matt Evanusa, Vine Chair**

There were also the conceptually unique examples such as Jeffrey Weinstein's circulating water chair (figure 4) which enclosed cascading water surrounded by a glass enclosure, or Johnathan Pryor's spider chair (figure 5), made up of a throne-like web of welded concave filaments meant to enclose the arachnid-friendly user in a spherical cocoon. Spiderman would approve.

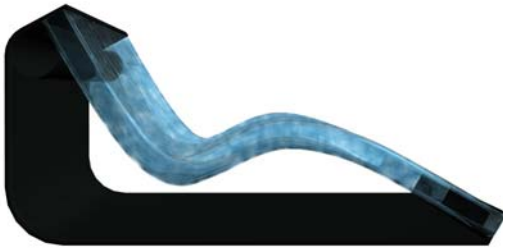

Figure 4: **Jeffrey Weinstein, Water Chair**

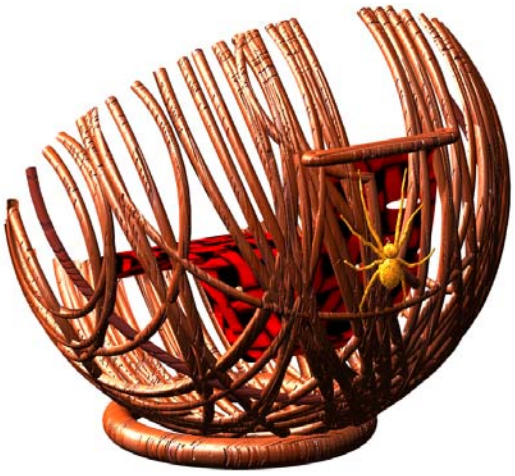

Figure 5: **Johnathan Pryor, Web Chair**

For the second phase of the chair assignment I ask students to think about their chair in the context of architecture. Just as Gerritt Rietveld used his Red Blue chair of 1918 in his Schroder - Schrader house in Utrecht to help create a homogeneous expression of architectural design, where expanding and dividing spaces were articulated by expanding plains in primary colors, I encourage my students to construct a complex relationship between their chairs and a work of architecture. This proves to be a bit more challenging, but there are some experiments worth mentioning, for example, Brent Palmer's pergola with double lounge chairs and a table (figure 6 & 7) or Zain Talyarkhen's marble bench and table inspired by an antique version from India, simply protected in a contrasting fabric canopy supported by poles. (figure 8)

Figure 6: **Brent Palmer, Pergola and Lounge Chairs**

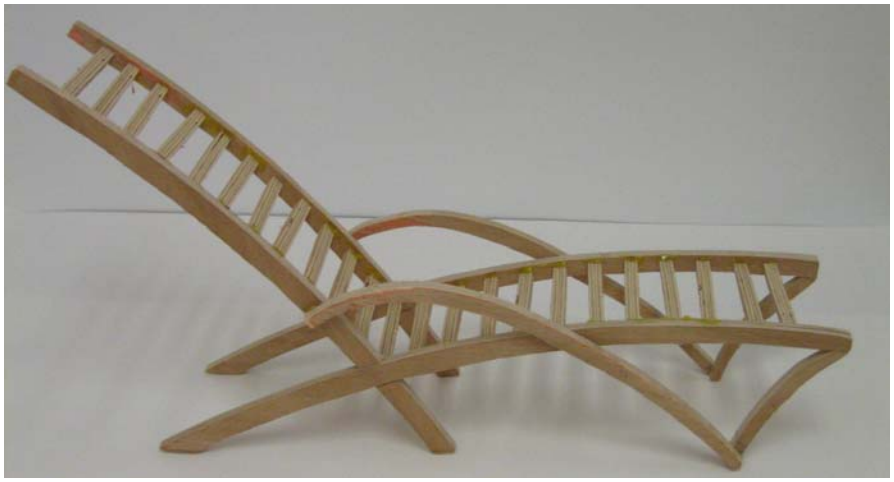

Figure 7: **Brent Palmer, Lounge Chair**

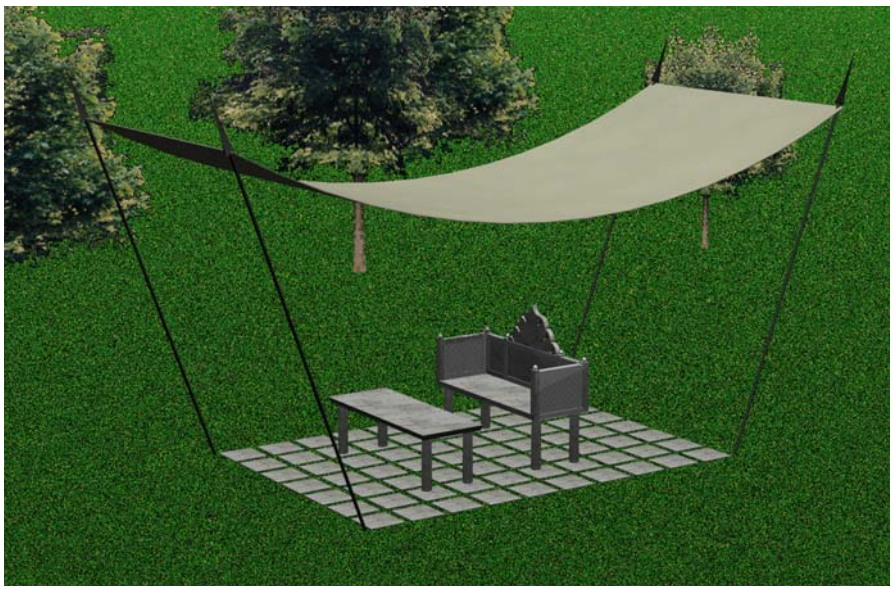

Figure 8: **Zain Talyarkhan, Marble Bench and Table**

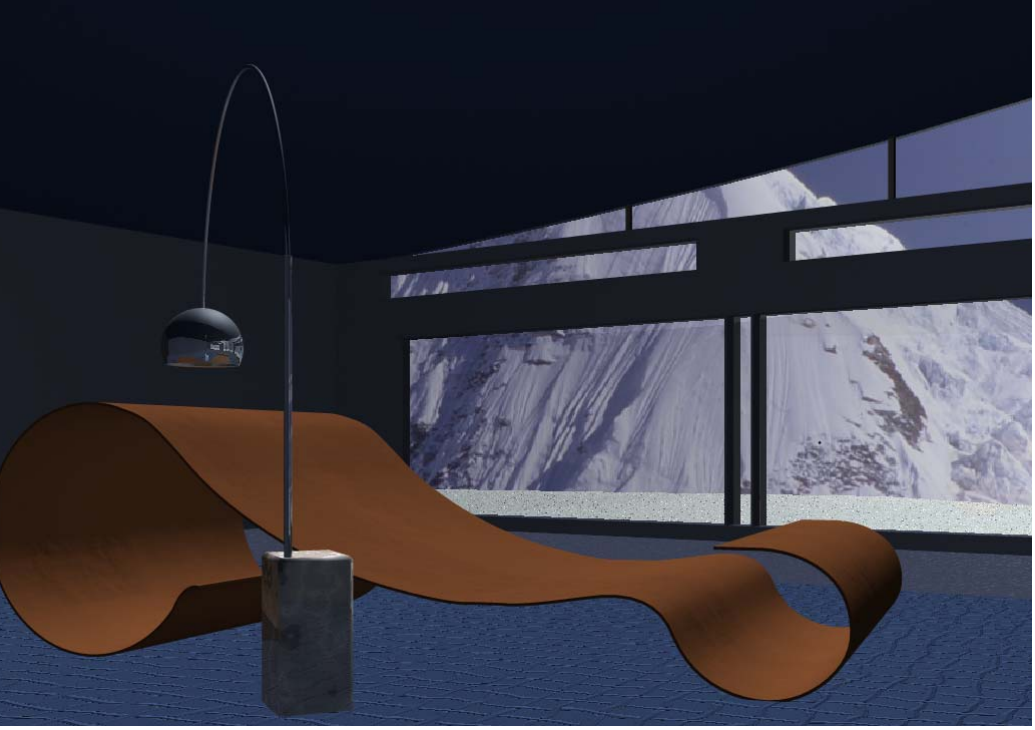

Figure 9 : **Michael Rosen, Chair**

A final chair successfully integrated into a pavilion is Michael Rosen's solution to the assignment (figure 9). Michael took a single sheet of steel and bent it into caressing and playful curves that culminated in cylindrical ends. This oversized noodle of a lounge is at once recliner and sculpture. When he places this chair in a faceted glass-walled pavilion in the mountains, it creates a meditative retreat where one can contemplate the majesty of the landscape. This is an example of how the computer can improve the level of visualization for the student. The ability to "see" a chair design within an architectural environment allows the student to conceptualize their work more fully, therefore assisting with the evolution and refinement of the design at every step of the creative process. Students are more able to think about relationships in a comprehensive way that seems to expand their understanding of architectural form and space.

Chairs are fascinating objects that we all come to appreciate. They suspend us above the ground, relax and cradle our bodies and define our personalities. Henri Matisse, who collected chairs and featured them in many of his paintings, once said:

> *"What I dream of is an art of balance, of purity and serenity, devoid of troubling or depressing subject matter, an art that could be for every mental worker, for the businessman as well as the man of letters, for example, a soothing, calming influence on the mind, something like a good armchair that provides relaxation from fatigue."*

I believe the reverse is also true; a well-designed chair is refreshing as a work of art. My students' exploration of this assignment demonstrates the range of possibilities available and expresses their unique young personalities.

Figure 10: **Corey Benson, Bar Stool**

Rob Meredith has been teaching art at The Dalton School for 28 years. He developed the architecture program at the school in 1979, later adding his popular course Art History in the City. More than 30 of his students have continued studies in architecture at college and graduate levels. As chair of the High School Art Department for 13 years, he oversaw the introduction of digital art (including media, video and architecture) and the construction of a new art facility. His recent focus has been on initiating projects that reach across disciplines and grade levels: The Original Mind Program brings extraordinary scholars to the school for inspiring collaborations with faculty and students; the Day of Service sends the entire high school volunteering in area neighborhoods. Currently Rob is spearheading the development of a cross-cultural curriculum with two-week student exchange with Dalton's Dutch counterpart, Dalton den Haag. Academic year 2007-2008 will see the first link of these students and their projects on line and in each other's homes, studying international politics, art, architecture and the connection between Holland and New Amsterdam. Originally from Massachusetts, Rob Meredith is a sculptor, BFA from SUNY Art & Design Alfred, MFA from Yale University.