1:1 Simulation in Architectural Practice
Kurt Ofer (kofer@altonview.com)

Altonview Architects, USA

Keywords: Full-scale Modeling, Architectural Profession, Education, Spatial Experience, Architectural Environmental System

Abstract
Full-scale mock ups have a long and successful history within the architectural profession. There is consensus that future users as well as professionals are better able to make design decisions in full-scale and in real time. Full-scale analogue simulation must be implemented as part of a typical design process for the sake of our clients as well as the sake of the profession: the cost of doing anything less is enormous. Altonview believes it is possible to develop an economical, flexible and utilitarian architectural environmental system (AES) which can be used, with modifications, by all professionals. Additionally, the media needs to take an interest in the AES movement, which will change their focus from the building image to the user. American architectural schools need to increase their interest in AES as well. The AES movement can be closely linked with the zeitgeist that will define the next century as seen in further examples and references from the popular press.

The Right Question
We will start with the concept of "designasaurs". It is solely because of the internet that I am here. We have been doing this environmental work off and on for about 10 years. It was only as a result of a hot bot search that I came across the EFA site, and a few e-mails later, here I am. So this is truly a web moment. On the internet, there are some great sites dealing with the future of us as designers. The Design Intelligence site deals with the future of the design profession from a business standpoint. Recently, they have begun emphasizing the fact that we have to ask the right questions. The new book "Smart Thinking for Crazy Times: The Art of Solving the Right Problems" emphasizes asking the right questions before we begin to solve any problems. If we don't ask the right questions, we will be increasingly marginalized as designers which is what has been happening. In the US, the role of architects is increasingly under question and revision. What is our duty as architects to clients? In what ways do buildings effect people, and how can we optimize that? We have been asking the wrong question in the architectural profession.
The questions that dominate the dialogue are something like, "what is the most marketable style or most familiar or formulaic or formalistic thing that we can do to keep everyone interested?" The works of everyone from Gehry to Eisenman to yourselves are all relevant architectural expressions. But what is the relevance to the user? That is the right question. How can we bring the wonderful architectural expressions that we are all capable of to a more pertinent level for the building's users? If we can demonstrate that we are bringing the relevance, the rigor, back to design, then we will be getting back on the track of what it is we are doing on a daily basis...relating to our clients...educating them...empowering them...and increasing the chances that they will be happy and actualized in the spaces that we design for them.

People
This is really very simple. You can make better decisions if you are operating in a less abstract medium. The costs of doing anything but what we propose are enormous. If this is truly the information age, then we need to empower our clients to make the best decisions that we can. In the increasing marginalization of the practice, introducing a "mold breaking" technique into the profession will start to introduce a new vigor into what we can offer. This is not a system for all scales of projects. Obviously, skyscrapers can't be mocked up. But the spaces inside them, including the lobby, can. We believe that there is a real need to get beyond style in the profession. Instead, let's have an architectural process which corresponds to client needs.

We feel that there is an enormous untapped potential in our clients' design understanding. Many people say, "I can't envision things in 3-D, or some such statement". And it's true, they can't. But they do have very strong spatial sensibilities, and we feel that it is possible to go farther with clients using the AES than it is without it. By going farther, we mean that, the AES gives them the realtime and realspace ability to make decisions about their space. At the same time, clients bring to the design process, many times, a conservatism. As part of our practice is in Upstate New York, we live in an architecturally traditional area. So many times, our clients come to our office with blinders on...they speak traditional and conservative architectural values. And these are extremely intelligent people. What we will be able to say to our clients is this...your precepts and attitudes are fine. However, give us the latitude to present you with some solutions that, on paper, you might reject. However, once you are in the space, you will understand the need, say for skylights there and windows here, even though these moves might violate architectural precepts.
One Example. We are working with a father and his daughter on the renovation of an existing Greek Revival house. They brought a very eclectic set of precepts to the design process...they are traditional but willing to consider "modernist touches". We started construction, demolition really, with a set of finely wrought plans with a very conservative room arrangement for the house. Because the second floor of the house had to be reframed, it was removed. Well, when the clients walked into the house after the floor was removed, they were overwhelmed by the newly created two story space. And right then, the design changed from a historical room arrangement to open plan living. It took their full-scale experience in the space to truly make them feel that another solution at variance with their initial precepts would be acceptable to them. Had we been able to mock up the space using AES, I believe that we would have reached this more liberal solution sooner. But they had to see it to believe it.

Process

The AES is a tool. It works best in the design development phases of a project. There are two versions: scrim and opaque. The scrim version has the following materials and qualities: X, Y & Z distances roughed, scale, proportion, rough views, furniture, circulation, axis, entry/exit. The opaque version has all of the above qualities plus sun, lighting, color and opacity. Before an environment is roughed typical schematic drawings are developed in the usual manner. Any number of floor plans are developed and studied and the most likely plan or two is resolved so that it can be taken to the scrim level of the AES. After this AES test and further manipulation, further typical studies can be created using computer 3-D imaging as well as elevations and floor plans.

Fig. 1 The Altonview AES in action.
Cost
A full-scale experience is mandatory for all clients who participate in design services from an architect. Just as the computer sketch pales in its ability to allow the client to internalize information, people need analogue experiences to assist them and form part of the decision making process. We are at the cusp of the 21st century, and we are still asking our clients to essentially decide on how they are going to live via abstract drawing formats.

We at Altonview have done the following regarding implementing an AES system: we believe that all clients should be afforded this ability. We believe that this is affordable to essentially all income levels: if you can afford an architect to design your whatever, you can afford a bit more to have a meaningful full-scale experience in the space. We believe that the time is right for the wholesale implementation of this system, examples of which we will discuss later from the popular press. The architectural schools in the US need to wake up, as well as the architectural press in the US. We believe that there is not a broad commercial appeal for this: it can't be mass-market ed, it is a specific service for select clientele (10% of the housing starts in the US involve an architect, so really it is self selecting to begin with.). The materials for a cloth version of an environment can be executed for about $400 in materials and about $2000 in time. Space rental is not included.

Architectural Press
We need to educate the architectural press. The architectural press continues to focus narrowly on the image: what can be marketed and what can be packaged as an identifiable consumerist identity has been absolutely paramount in their own initiatives. The absolute desultory situation of the press in the 80s, in which there was a style of the month, served to place the architecture education and societies impressions of the art back. This seemed to match the social milieu, in which no one was too concerned about the long term effect of what they were doing, as long as they met their goals of making money and actually surviving. What is the purpose of the press in the near term? How can the press become more sensitized to the true needs of the profession, and actually modify itself so that it starts to serve more of the public good?

I enjoy making all kinds of comparisons of the EFA industry to the computer industry. Both are information centric, although one involves digital formats and another analogue. There are all kings of university based think tanks, government supported as well as private incubators designed to foster the development of these industries. The reason that I heard about them is because they are in the popular press. There is big money involved...fortunes can be
made...then talk of revolutionizing the world. Well, without going over the
top, I believe that the efforts of what we see here are just as important, just as
empowering, just as democratic, but we aren't going to get rich...the inability
to mass market this from the store shelves prohibits that...then again there are
franchises. But we need to bring in the media on this. Because if people start
to learn that there is a segment of the architectural industry slated to
empower, democratize, and inform during a design process, then it will bet
attention and keep our efforts. Possibly even actual money...

Education
The educational experience is more abstract in that the majority of learning
occurs in segregated environments away from the realities of both the profes-
sional realms and the marketplace. The design focus is based on a tradition of
focusing on a single design solution, and the tendency to focus on the plural
of both input and solutions is neglected. This fosters the "architect as God"
mentality resulting in the single best solution being offered rather than a res-
pect for the culture of the users. There is also an overarching focus on the
appearance of the architecture rather than a focus on items such as program
and user needs.

The general nature of the architectural curriculum is very fuzzy. There is an
absolute lack of intellectual rigor in place. The locus of the intent of the de-
sign cannot be isolated, as it is drawn from the student's scattershot efforts to
balance the myriad of components comprising architecture: history, mate-
rials, details, program, form, etc. This lack of rigor has led to the non-speci-
fic nature that the architectural profession has become. We are continually
defining what it is that we do, and the lack of specificity in the information
that we produce enables us to be challenged by clients at will, putting us at a
power disadvantage, which translates into a compensation disadvantage.
Appendix: Examples from the Popular Press

Fig. 2 For the trial of the *unabomber*, his cabin was removed from its site and assembled in a warehouse. This was done so jurors could experience what it felt like to live and work in this structure. What is incredible is that it was deemed necessary for jurors to experience the spatial qualities of his cabin to fully understand the conditions leading up to his crimes.

*Architectural Record - February 1999, p. 241:*  
"Challenged to get real and get personal, architects who respond with designs that improve the quality of people's daily lives will not only have more satisfied clients but will improve their profession's public profile." If we insert the word process after the words "...who respond with designs" isn't this addressing what we all believe in?

Proceedings 7th EFA-Conference • Florence 1999 / 62
Before you build your next building, try walking around in it for a while.

Fig. 3 ASG is a software manufacturer who obviously believes that we need to walk around inside our buildings before we build them.

New York Times - October 25, p. 24:
Here we live in an age in which there has been created a new "profession" called "life coaches:...and they advise their clients on how to reorient their lives to attain that happy ending. I see AES experiences in the same context, that in a way architects and designers are indeed these kind of life coaches, and an AES immersion will fully apply to this zeitgeist in which concepts such as entertainment, information, performance, individual, transformations are related to and nurtured.
Fig. 4 Marvin Windows is a major US window manufacturer. They seem to believe that simulation of a window in a wall is the best way for their clients to decide on what to purchase. This image captures what all of our simulation efforts are about in a nutshell.

Ralph Lauren has been cited as having given "the middle class what the upper classes and celebrities had always had: a conscious aesthetic." This aesthetic transference describes an AES experience.
Fig. 5 Roll the cabinets around. Arrange your kitchen any way you want. Understand what it is like to reach from the stove to the sink. All of this is possible at New Hearth's Protosite in Manhattan.

*New York Times Magazine* p. 66:
Jacques Herzog discussed his worldview, and the fact that he likes to run for exercise. And he notes the rise in the interest in bodybuilding, and goes on to speculate that this interest correlates with "the alienated state in which most people go through life-confined to their heads, cut off from their bodies." He states that architecture only has a future if it remains rooted in the physical. The AES is analogue, is physical, and is related more to architecture than is, say, quicktime walkthrus on a computer screen.
Fig. 6  Large photograph of TWA flight 800, reassembled in aircraft hanger in order to understand what happened to the airplane. Simulation to understand what happened vs. simulation to understand what is going to happen is the same [New York Times Magazine - 11 May 1997, pp. 38-39]

New York Times - 7 February 1999, p. 27:
Bernard Holland laments about the way that the performing classical music industry presents itself to the world. To more modern (and youthful) eyes, the classical tradition and concert looks ridiculous: where is the all pervasive entertainment aspect? He concludes that "Classical music has to trust in its material while at the same time divesting itself of the pomposity inherent in old rituals." Of course, the old rituals have an analogue in the architectural profession, and the AES will create the new formats. In essence neither the buildings nor the music will suffer.

James Marston Fitch:
In 1947 JMF wrote of the shortcomings of modern building. He saw the architect as being predominantly form conscious, principally as a result of technology...technology will solve anything so we don't have to worry about both nature as well as our sensory perceptions. He of course advocated the understanding of design in larger social and cultural contexts. I wonder what he would say about the potential of the AES system?