A BETTER UNDERSTANDING OF THE ROLE OF ENDOSCOPY AS A TOOL IN ARCHITECTURE

Philip Thiel
Center for Experiential Notation
Seattle, Washington USA

As the most tool-dependent species on our planet, our technology determines our activities and thus defines our existence. Because of this a clear understanding of the ends-means relationship of our tools is of critical social- and professional-concern.

Endoscopy, or the use of periscopic-like devices to extract human eye-level visual images, static or dynamic, from iconic scale models of proposed environments, is a case in point. Use is appropriate at advanced stages of planning and design, when such experiential simulations are necessary for both professional evaluation and lay approval. But note that the simulation is only a means to an end, and that the fundamental purpose is to evoke a response to a proposal. Simulation and response are opposite sides of the same coin, and the response is the goal.

Any such responses are meaningful only with reference to the ultimate users' experiential preferences, preferably explicitly established as "performance specifications" before the start of the design process in consultation with a representative sample of these people. This implies the necessity of a means to identify these beneficiaries of our work, and a means to characterize their environmental "experiential profiles". It also requires a means for the discursive scripting of their experiential preferences. The development of a design oriented to the achievement of these ends then depends on a similar time-based scoring for the description of sequentially-experienced environmental attributes, hypothesized as related to these responses.

Endoscopy then takes its place as the means for a penultimate check on the experiential design-hypotheses, in conjunction with suitable means to record the simulates' responses in the same format as the original experiential performance specifications, for comparison therewith.

The danger in being the most tool-dependent species on Earth is that in our necessary concern with technological means we may loose sight of our ultimate human ends; as suggested by the apothegm "the operation was a success, but the patient died". Our inexorable impetus toward technological development means that the specialized training that is inherent in professional education tends to separate and distance the perceptions of those so conditioned from those of the many others who are the presumed beneficiaries of their efforts. [1]

Nowhere is this more noticeable than in the architectural profession, where awards for "design merit" are based on the peer evaluations of semi-abstract photographs of unpopulated building forms, in term of formal aesthetics. In this charade professional competence is publically certified with no reference to the experiences of those who must use the design.

Professional rationalization of this situation takes the form of what has been called the "art defense", in which architects claim the freedom and autonomy of artists to pursue non-rational and personal mythological goals. Besides begging the question as to the desirability of having each new project in permanent view in the public realm as a "self-expression" or a "personal statement", this attitude reveals a more fundamental confusion in its implicit polarization of "art" and "science"; where, at the creative level, metaphorism and empiricism are in fact of equal importance to both.[2]

If we are to regard architecture (and any other professional intervention in the physical environment for social purposes) as the implementation of design for the *users'* benefit, we are then obligated to have explicit reference to the experiential preferences and goals of the ultimate users of the environment (who are not always the funding

clients). These preferences become our performance specifications, and we are equally obligated to an evaluation of the putative realization of these experiential goals in the built environment by these ultimate users; as our performance achievements. Comparison of these intentions and these results then provide a true measure of "design merit", in which ability is based on the degree of achievement of preestablished goals, and where these goals are the preferred experiences of the actual users.

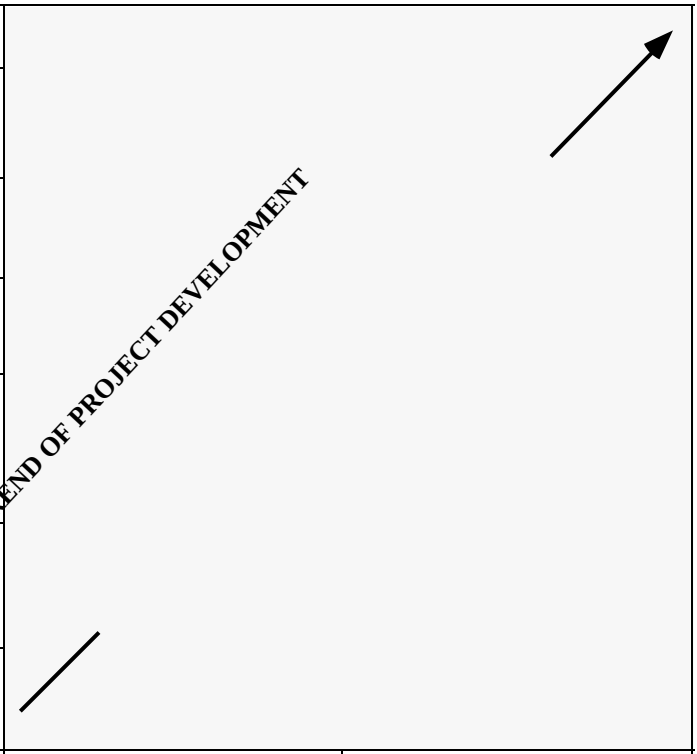
Precedents for this mode of design exits in the original circumstances of the builder-user, and in the subsequent special case of the custom-designed residence where the architect and the client-user may mutually inform and educate each other. Our challenge is to achieve this mutuality in those more numerous and more significant cases where the users are many, diverse, and individually unknowable.

Implementation of this user-experience approach in architectural-environmental design requires a notational means for the time-based description of the preferred experiences of the several groups identified as the future users of the project. The development of these explicit performance specifications, in collaboration with a representative sample of these people, offers the first opportunity for the exercise of the designer(s) creative imagination.[3]

The next opportunity arises in connection with the planning of the new environment, in practical and experiential terms, to support and encourage these experiences in the course of the ultimate users' use of the environment, and in the context of their daily lives. These experiential design hypotheses are also best developed in terms of time-based notations describing multisensory experienciable environments, for each category of use and user.

Development of these experiential design -hypotheses obviously should be informed by reference to the profiles of the environmental perception-response characteristics of the user-group samples. This data must serve as the basis of the formulations; not the inadequate

Real-world user-participants	
Environmental managers and operators	
Construction contractors and builders	
Public regulating agencies	
Financial sponsors and investors, public or private	
User-participant analogues and surrogates	
Designer-innovators, envirotect	



SIMULATION TYPE	CONCEPTUAL		PERCEPTUAL	
	Analytic (symbolic)	Laboratory/studio analogic	(homomorphic) iconic	Identity (isomorphic)
PRESENTATIONAL mode static, space-ordered	Mathematical expressions; written specifications	Bubble diagrams of functional arrangements; floor plans, sections, details; topographic maps; engineering drawings	Perspective and elevation sketches, drawings, renderings; scale models; photos and montages	Stage, film, and TV sets; museum "habitat group" displays; window displays
DISCURSIVE mode dynamic, time-ordered	Written descriptions of behavior circuits, experiences and environments	Time-sequence, behavior circuit diagrams; experience and environment notations	Video tapes, films, slide-sequences from models; scrolls; computer sequences; drawing sequences	Real world itself; operator training devices; full-size working mock-ups

and inappropriate assumptions of the designer himself or herself as the future user. Here is the third opportunity for the exercise of creativity; in empathy informed by substantive information on physical capabilities, previous learning and experience, and short and long-term situational demands on the anticipated future users.

It is in the testing of these design hypotheses that architectural endoscopy plays its proper role. Moving from the abstract simulation formats of the notations and plans to iconic representation of their experiential qualities in terms of virtual movement through scale models, the advanced design hypotheses become accessible to the lay user-sample, for their responses: for subsequent comparison with the experience performance-specifications. (Figure 1). Iterative development of the design by this process will then converge on a solution in which the user-analogue responses to the simulations are within acceptable limits of the performance requirements. By this means architecture and environmental planning can achieve a measure of predictability, in terms of human experiences, and thus in fact deserve the right to be called "design".

In this perspective the proper role of architectural endoscopy in the design process is seen to be as a means of obtaining feed-back from a representative sample of the various anticipated future users of a proposed environment, as to their perceptions of its experiential implications for their activities in their life-context. These lay-responses thus serve to guide the interative design-development process to an appropriate level of predictive confidence in meeting the experiential performance specifications, previously established in consultation with the future-user analogs.

Figure 1
The diagram relates simulation types (horizontal scale) with simulators (designers) and simulatees (vertical scale).

NOTES

1. "The idea that human culture is dependent on its technological foundations is at first startling or even offensive, yet reflection will show this to be as obvious as it is undeniable. Chartres would have been impossible

without the craft of the stonemason; the discoveries of Galileo, which revolutionized man's view of his position in the universe, could never have been made without the skill of the lens grinder; the glories of Bach would not exist save for the manufacturers of musical instruments. All human societies — their economic and political structures and their intellectual cultures as well — are dependent upon their technological foundations...."

"The fact that technology sets limits to man's activities and in large measure defines his existence is no contemporary or recent phenomenon, although the scope of the powers bestowed upon him is. From the every outset of his existence man has been dependent on technology; in fact it could be argued that technology is what has made man man" (Victor C. Ferkiss: *Technological Man*. New York:Braziller, 1969).

2. The growing body of literature on this problem includes:

Dana Cuff: *Architecture: the Story of Practice*. Cambridge, MA: MIT, 1991.

Russell Ellis and Dana Cuff, (eds.): *Architects' People*. New York: Oxford, 1989.

H. Broughey; "Blueprints for Behavior: The Intentions of Architects to Influence Social Action Through Design". Unpublished Ph.D.. Dissertation, Princeton University, 1969.

Peter Stringer: "The Myths of Architectural Creativity". *AD (Architectural Design)* October 1975.

3. A full discussion and description of time-based notations for the actions, feelings and thoughts of streams of experience, and of the sequentially-experiencable space, place and occasion of physical environments, as well as the transducer, coder and attender-profiling of user-participants in the environment will be found in Philip Thiel: *Environmental Design and Sequential Experience.* Seattle: University of Washington, in press.