

Drawing as a Site for Exploration in Foundation Design

MARTHA ABBOTT
University of Minnesota

Within the discipline of architecture, drawing is often regarded as a tool for communication. But, is architectural drawing principally about communication, or does it touch a more elemental and profound yearning in us which seeks a reality within its own physical medium? If we believe architectural form and concept are one, inseparably defining one another as two sides of a coin define the coin, we could imagine drawing not merely as an instrument for communication, but as a means to explore architectural ideas.

As a way to stake out the territory for this paper, let me share a story with you. My five year old daughter, Molly, loves to draw. One day she sat down to draw her classroom hamster. Her first sketch elicited an unexpected comment from her, "oh, that's a talking bat." Another drawing inspired this, "...and that's a talking sailboat." Rather than frustration with her inability to will an image of the hamster into existence, Molly felt an immediate and unencumbered response to what was drawn, belying her belief that the drawing had a life of its own into which she had entered, in dialogue with the drawing.

Young children learn through repetition and if left to their own devices, will often repeat a drawing over and over, subconsciously or unintentionally introducing slight variations on a theme as they dialogue with and through the medium. Children use drawing as a place to investigate and reveal their emerging understanding of the world around them. The physical medium of the drawing is both the place of and a partner in the investigation. The drawing unfolds easily and modestly as a mute companion in their playful dialogue. Children seek a reality within the physical medium of the drawing, to which they give their full, undivided attention. The curiosity and enthusiasm that children bring to their play and work might serve as a model for an alternative approach to drawing in architectural design education. The ego less, childlike play, resisting expectation or pressure from peers, in which children find an immediacy within the drawing, might serve as a genuine example for us to emulate.

Before written language, early humans used drawing, to honor, depict, and record stories; to capture fleeting moments and to render the beauty of what they saw. These unpremeditated expressions of pure awe at the beauty of form exploit the possibilities of drawing as a medium. The distinction between the image of an existing condition and the formal expression of an idea is inadvertently blurred as the author and the drawing are partnered in the process of making. These are just two examples of the possibility of drawing as a site for exploration and investigation, rather than merely as a tool for communication.

Now, set aside for the moment this idea of drawing as exploration to ponder two important considerations as we continue staking out the territory of this investigation. First, one challenge for architects is that, for them, drawing is an intervening medium, not directly the object of their thought and creativity. Though architecture directly engages the materiality of our world and our existence, it differs from other arts in that the architect's most intense activity is in the manipulation of the drawing and not in the manipulation of the final artifact, the building. What distinguishes the work of art is that the subject and the medium are inseparable; the artist's medium constitutes the conceptual idea, given vitality through its rendering into form, a painting or a sculpture, for example. Architects, on the other hand, employ various means to approximate the building, focusing on particular material intentions which result in a semblance of the building, not the actual building.

Secondly, the predictive role of architectural drawings, so much a part of the professional and academic domain today, was not always the case in the evolution of an idea into architectural form. In the past, drawings suggested where the craftsmen might begin the process of construction; the craftsmen, usually equipped with skills evolved over generations, were entrusted with realizing an architect's vision. However, though the relationship between drawing and building has undergone

transformations over the centuries, our penchant for control still has not yielded an easy, one-to-one correspondence between a drawing and a building. Indeed, in their book *Architectural Representation and the Perspective Hinge*, Alberto Perez-Gomez and Louise Pelletier challenge the conventional set of projections which we assume add up to a complete, objective idea of a building. They suggest that "... an invisible perspectival hinge is always at work between these common forms of representation and the world to which they refer." More important, the properties of drawing, which give it its inherent value as a method of representation, often go unrecognized and underutilized. This is both surprising and unfortunate, for the power of the drawing as a medium lies not in its likeness to that which it portrays, but in its distinctness from it. This may sound paradoxical or seem to put the architect at a disadvantage, but I believe it opens the potential for architectural drawing, in and of itself, to become an opportunity for exploration, inherent in which are the properties and powers which underlie and inform the conceptual development of architectural form.

Against the backdrop of these considerations, let's return to the possibility of drawing as a site for exploration and dialogue. Drawing, the kind of "making" most often used by architects, resides between the architect's imagination and the design of a building. Drawing techniques are doggedly taught in schools of architecture, so convinced are we that good technique will yield good design. The possibility that drawing is more than a means to communicate is no doubt recognized, but perhaps overlooked in design studio pedagogy where technique may be the arbitrary choice of an instructor. If we are committed to engaging discovery and exploration of the undetermined dimensions of the architectural idea, the role of drawing in the design studio could assume new significance: as an instrument to expand the boundaries of what is known. The process of making and the investigation and development of ideas could occur simultaneously in one construction, the drawing.

Within the drawing, the mind and the hand inform one another. The mind and the hand are partners: they move in an unfolding dance. Drawing and thinking become simultaneous operation and expression. Conceptual notions arise within the character of the drawing as evidence of a dialogue between the author and the drawing, the mind and the hand. The process of making is critical for students in their early design years, for they learn through making. Since drawing is a medium which students can employ easily, it can serve as a means for them to investigate what could be, instead of a means to depict and represent what is known. It is important to make a distinction here between drawing which is meant to record impressions or document that which exists, and the predictable rendering of a premeditated vision in the student's mind, the "willing the image of the hamster into existence," so to speak. Exploration through drawing of what could be, is a way of manipulating ideas through the manipulation of architectural form.

Drawing creates a world of its own in terms of its own medium and its own making. It has physical constraints and a physical presence; still, as a tool in design education, it is both a means of exploring ideas, and the residue which remains after making, working, and thinking has occurred on paper. Drawing becomes evidence of an investigatory process. Through "dialoguing" and "partnering," the drawing, like the child's mute companion, is simultaneously formed by the student and informs the student. However, this is only possible if the student is encouraged to see and respond to what she has drawn. In this light, architectural drawing allies itself with the work of art. Indeed pencil and paper for the architect become like paint and canvas for the painter, or clay for the sculptor. Drawing—both the process and the record—emerges as the material residue left by the process of drawing and thinking simultaneously.

This suggests that perhaps, as teachers, we must consider not only what is known, knowable and teachable, but also consider those places on or beyond the limits of what is known—the frontiers—to explore those areas where what "could be" is possible. We must have the courage and the patience to allow ambiguity, spontaneity and uncertainty to sit comfortably in the work of our students. The site for exploration is that place on the frontier of architectural knowledge—beyond convention, institution, or expectation—a place which is wide open for exploration and prospecting.

Compelled by their eagerness and naiveté, beginning design students are like the soft earth from which persistent questions about how architecture conveys meaning seem to bubble to the surface and demand consideration. Their questions provide a way into our discipline. Architectural educator David Leatherbarrow contends in *The Roots of Architectural Invention*, that the "fundamental questions simply do not go away, nor can they be assigned to past periods while "answers" are tied to the time of their foundation. Fundamental questions in architecture persist, and the understanding and experience of their persistence actually makes up the structure of architectural reality." In coordinating and teaching in the foundation years of architectural design, I prefer to confront questions directly at their elemental levels, assuring that they arise directly out of what is seen in the work. It is in this guise that the integration of theory into the fabric of the design process through drawing and making, provides beginning students with an invaluable conceptual framework within which they may begin to develop their own internal, critical sense of what they see and make.

At the same time however, while theory plays a role in architectural design and may be an important factor in the design process, the theoretical concept does not possess the power to effect design. Though typically architectural theory is concerned with either a body of knowledge or ideology through which a piece of architecture might be examined, the arrangement and organization of pure concepts cannot generate form. In order to determine the undetermined, one cannot simply

choose a conceptual solution to depict, for architectural ideas are not accomplished in the medium of thought, but in the medium of form. Thus, the design process itself, within which the architecture unfolds, becomes a site for theoretical investigation, as well. Within a fairly narrow and specific set of pedagogical parameters guiding the scope of studio work, well-chosen, material constructions allow issues to become clearly evident in the form. By examining the problem of thought and design in the making of architecture at the foundation level, I find that meaning resides within the invisible dimensions of the physical material—including drawing—that constitutes the architecture.

Let's begin by looking at the sketch. The sketch marks a poignant moment of becoming in the design process in which multiple combinations and readings are simultaneously present, open and possible. The sketch is a repository of dormant vitality that lies within the penciled textures of its physical materiality and is as much a participant in the process of the architecture becoming, as the architect herself. That dialogue between student and penciled marks reveal latent and simultaneous possibilities within the drawing. Ultimately, subsequent drawings reveal and unfold just one or two of the possible configurations inherent in the initial, generative sketch. The student and the instructor together must recognize the intrinsic, expressive power of that early sketch, coaxing the student to see, respond to and conceptualize through the materiality of the drawing. However, it remains the responsibility of the instructor to choose the type of drawing, limit the palette, and define the parameters, so that particular issues are clearly and inherently salient in the process of making the drawing.

A section is the place to explore architectural space and the experience of spatial volume. The section demonstrates the experiential dimension of architecture in relation to space. Though the section is an orthographic projection like the plan, giving equal weight to each element in the drawing, the section is unlike the plan, for within the section human scale and human interaction with space become legible. Sectional elements within the drawing describe the experiential aspects of the architecture.

Today, new technological advances, the speed of reproduction, and seductive capabilities for depiction entice us. How can architectural education effectively integrate the technological alternative to hand drawing into the curriculum? Drawing on the computer provides students with colors, lines and textures to "choose" from; opaque, transparent or translucent materials are selected and drawn, complete. Decisions come to a final resolution before they are fully conceived; there is little possibility for ambiguity, suggestion, or simultaneity. These drawings communicate what has been chosen from the digital list of possibilities. But, drawing is about evolving choices. While some might call this ambiguous or fuzzy thinking, design drawing is by nature a fuzzy process and therein lies its power.

Using drawing to explore frees us, through the iterative process, to distill the work, fueling the investigation and eventually the formal resolution. Students must learn when it is appropriate to use the computer and when it makes sense to draw by hand. Representation is never neutral: knowing when to use which tool is critical to design thinking. This suggests that instruction in foundation design must guide students thoughtfully through a process of simultaneous making and thinking to familiarize them with this extraordinary connection.

Overlay and trace, though not ignored judging by its frequent use, nevertheless, probably needs emphasis around the issues I have raised here. Unexpectedly, tracing has a profound impact in the development of the ability to see and distinguish contours, shapes and line weights. An unusual benefit of tracing is that often students feel released from the pressure of having to produce something on the blank page when they have the task of tracing in front of them. Inadvertently, they shift into a trancelike mode of seeing and drawing, in which they automatically listen to their traced marks.

There are other drawings which distinguish between depiction and proposal. By the use of different and combined media, depiction may be enhanced and ideas developed in ways which are essential to their making and production. Again, Perez-Gomez and Pelletier compel us to consider the implications of the tools we use and suggest that in searching for "...appropriate alternatives to the ideological stagnation plaguing most architectural creation [today,] the first crucial step is to acknowledge that value-laden tools of representation underlie the conception and realization of architecture." (my emphasis) Ideas are manifest in the form, order and character of the drawing where the medium is important as the means of depiction. Exploration through drawing of what could be, is a way of manipulating ideas, not architectural form, per se: such explorations on paper might propose, not merely represent. This shift in emphasis for drawing suggests that this "paper architecture" is perhaps more akin to art.

Exploration and investigation awakens that place in the mind where the work of the hand touches an inclination, where space and form are fluid and allow all possibilities for their combination and intersection. Conceptually, this marks a passage into uncharted territory where possibilities unfold only through the poetic vision. Since the fundamental questions remain with us to be answered in our time, we must have a way to access the frontiers of architectural design and confront the question of its materiality. By examining the problem of thought and design in the making of architecture, the design process, in which meaning resides within the invisible dimensions of the material elements that constitute the architecture, we find the stuff which is the meaning.

Drawing becomes a liberating element permitting students to place themselves on the outer limits—the frontiers—of known

conditions. Compelled to pursue, explore, investigate, reveal, and dismantle, students may safely transgress these boundaries and find ways to define and engage a "depth" in their work that reflects our human condition. Perez Gomez and Pelletier urge us to see "the possibilities of the constructed world as a poetic translation, rather than prosaic transcription, of its representations." I contend that more than a translation, the drawing becomes the subject itself: the site for investigation and the artifact. We must have the courage to embrace drawing and its inherent properties as a critical tool for investigation and engagement that reflects our human condition, and recovers the lost ground of our connection to making, using our hands and

our minds together, through which the drawing opens up that place where there is no distinction between exploratory artistic act and productive design act.

REFERENCES

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