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REVISTING THE TRANSCENDENTAL: DESIGN AND MATERIAL IN ARCHITECTURE

Abstract

Husserl's Transcendental Phenomenology provides a fascinating attempt at challenging the scientific and conventional conceptions of what constitutes difference, and as a consequence of difference, categories. Embedded in the Western heritage of architecture are numerous intersubjective agreements on history and theory, yet a lateral comparison of built work and settings over time reveals a seemingly ever evolving, and on occasion revolutionary set of artifacts and ideas. The paper suggests that the media of architecture themselves set into motion a search and never-concluding set of iterations and provisional knowings further complexified and enabled by changing technologies and cultures. The paper reviews shortcomings of Alberti's theory of proportions, Semper's architectural materialist theory, and the most recent computer enabled biomorphic strategies.

It is possible that at its heart transcendentalism in architecture is epistemological-phenomena gathered as a result of ontological investigative forces vs. Platonic forms. The paper concludes that there is a bridge between teacher and student through Heidegger's 'The Origin of a Work of Art'. Here the act of ideation, thinking, and making in dialectic with matter and creation of space, light, and, indeed, the creation of time itself are posed as originating from the intuitive and transcendental.

Of Things and Processes of Emergence of New Things

It is easy to get lost in the thingness of architecture, especially for an architect. Literally every gathered item from gage of structural studs to metallic content of screws and chemical composition of paint, from source location of the proper veined stone to favored manufacturer of a door handle or faucet, is specified by the architect, engineer or consultant under the direction of the architect. In one sense architecture is a construction of things- literally millions of things. A project specification manual for the simplest structure may reach hundreds of pages and for a complex one, thousands of pages in multiple volumes. The completed structure rests in its place and begins yet another life in its use, providing a temporal window in actuating another construction of an earlier specification- a 'program'- of functions the sponsor or user originated. While the building is a construction, the place it creates is also a construction- a personal and social construction of new place for experience and memory, even apart from intent of the sponsor. These efforts take sometimes years in initiation and years of reflective closure before there is a hint of success in the real.

Categories are an important component of the breakdown of the complexity of an architectural project. In the most traditional sense, architecture is a gathering of intentions at many scales of materials as well as thoughts, which create a momentum toward what seems like a decreasing number of propositions and options for its execution, actualization, and completion. While for the layperson the built manifestation is the architecture, for the designer, the process of the musings, concepts, ideas and process – the way they gather the specific things and aggregate them as the built is just as important. Ideas do not simply appear and materialize as structures. Architecture understood this way is both things as object and thing in process, noun and verb. Its substantiation crosses not only categories of materials, methods of construction, and public and private expectations, but categories and conceptions of thinking. To the philosopher, the thinking itself is perhaps the most important aspect of this discussion. But I will propose that no single method (Husserl's reduction) or philosophic position (phenomenology) acts as a master narrative or guide of the design process in architecture. I do believe however they are critical components of a very fruitful process in the emergence of new things within states of being.

As a teacher, how one thinks and conceives of architecture such that it may be taught, with resultant evidence in the student work, is paramount to me. How one assembles methodology, but one of openness to the possible as well as gathering the professional conventions of representation and production, how one posits a material thing that seems to suspend time yet acknowledges making and change- anticipates additive and subtractive surfaces via weathering, and how that effort gathers the issues of humanitarian and environmental care for larger and smaller contexts and processes, is fundamental. Husserl's transcendental phenomenology as action and thought provides a fascinating attempt at challenging the scientific and conventional conceptions of what constitutes things and difference, and as a consequence of difference, categories and judgment.

The transcendental reduction, for all its difficulties of terms and problematic aspects of tracing its arc through Husserl's writings, suggests aspects of a methodology appropriate to architectural design. As an initiating act, the transcendental creates a free space apart from professional convention, simplistic pragmatism, and uncritical precedent, within the consciousness of the architect-perhaps beyond description- for the ideation of aspects of the challenge of the work to flourish. If architecture is to escape the low expectations of sedimented cultural and professional naturalisms, it requires such a free space for radical thought. But however the rewards of such an attempt at relevancy, at its core architecture cannot exist solely within the idea and remain transcendental. Another set of actions beyond the kind of reduction Husserl's work suggests is needed to bring the ideas back into the world of reality. This is not an abstract exercise, but a fully human one. The work does not have intrinsic properties of form that bestow themselves among the people in an esoteric sense, but becomes an operable part of the world, indeed providing world, and revealing an intersubjective world and opportunity of being. Husserl's researches into transcendental phenomenology...developed side by side with his interests in intersubjectivity and the

embodied subject. (Moran 67) ...He notes that when we articulate things, when we judge or relate or compose or structure things, we do not merely arrange our own internal concepts or ideas or impressions; rather, we articulate things in the world. We bring out parts within wholes. Our judgments, for example, are not internal compositions we match against some sort of 'external' world; they are, in their most elementary form, the assertive articulation of the things we experience; we articulate the presence of things, the manner in which they are given to us. (Sokolowski, 216)

I will suggest in the paper that a form of reduction to the free space of the consciousness and imagination- a place of pure intuition- is requisite for the architect to enable architectural invention and progress. Having achieved this freedom, how this freedom is subsequently re-embodied in the work is not something that my reading of Husserl suggests he was concerned about. For this completion of architectural action I will suggest that rather than a break with Husserl, Heidegger actually gives a partial path toward the actualization of the work through his *Origin of a Work of Art*. While philosophically Husserl and Heidegger as mentor and colleague gradually diverts and disengages, I find aspects of their thinking linked across the arc of a possible design process. While the terms and categories and a precise distillation of their thinking is problematic for the scope of the paper, I hope to place in the record a beginning of what I think each embraced, that phenomenology is *of something*. It was not meant to lay fallow as philosophy, but radically meant to engage the world of actions. As Robert Sokolowski wrote, "...epistemology has not come to closure...Despite the great success of the modern sciences...there is no uncontested possession of the field. As a theory of knowledge and method, modernity is still unfinished, and it is to this branch of modern thought that phenomenology makes its contribution." (Sokolowski, 201) As epistemology, as ontology, as reawakening the world to itself, phenomenology remains relevant and vibrant.

Aspects of Husserl's Transcendental

Husserl's highly original and extensive output shows a striking opening around the turn of the century but a struggle to refine his project. By placing phenomenology within a context of the sciences, he necessarily places burdens upon process and evidence that seem from this reader to never entirely be resolved. The breadth of his goal, to place phenomenology as the core philosophy was a daunting task that produced few followers directly in his wake. What is fascinating is how Husserl understands the world is filled with many modes of thought and epistemologic means. While his life spans the emergence of the psychological understandings he initially moves within them but then gradually from them, ever concerned over psychologism entering into his science description. He affirms that individuals have subjective experiences, but does not wish to espouse an isolated sense of being. He lauds the sciences as creating facts, but questions their disengaged understandings as another diversion from wholeness. He also did not see a path for the sciences to capture via their prejudice with realism of things, the phenomena and processes that had content but not actuality. As Dermot Moran has noted, "Husserl

acknowledges that the ability of the sciences to parse and categorize may produce facts of things that get beyond or below (as one chooses to place value on such relations) the thresholds of appearances. Essential features may not be factual or yet capable of being placed within the factual, or even actuality.” (Moran 132)

Ultimately the frustrations with competing descriptive systems gave rise to the need to be clear about what was experienced and what phenomena actually presented themselves. He suggested philosophy bracket out assumptions of the everyday as well as most sophisticated sciences. (Moran 147) This bracketing of prejudices that color appearances attempted to rid the appearance of conventions, symbols, and prejudices; indeed, Husserl made radical claims about the freedom from presuppositions. In *Cartesian Meditations* he claims everything the enquirer needs, he or she must discover within him or herself, including the meaning of his or her philosophic terms. (Moran 126) this siting of the seat of clarification was not a simple singular subjective personal reflective act, but a series of acts he termed reductions. As Dermot Moran explains:

He distinguishes at various times between different kinds of reduction: indeed in *Ideas I* he speaks of phenomenological reductions...(he) speaks indifferently of phenomenological and transcendental reductions. In *Cartesian Meditations*, Husserl runs these together into a ‘transcendental-phenomenological reduction’. In the *Crisis*, as many as eight different forms of reduction have been catalogued...Husserl characterized the practice of epoche in many different ways: ‘abstention’, ‘dislocation’ from, or ‘unplugging or ‘exclusion’ of our positing of the world...He speaks of ‘withholding’, ‘disregarding’, ‘abandoning’, ‘parenthesizing’, ‘putting out of action’, or ‘putting out of play’, all judgments which posit a world in any way as actual...” (Moran 147)

In simpler terms, Husserl is calling us out of our day-to-day mode of thinking and language, past the narrowest nature of objectivity delivered by the sciences, and even past the direct realm of immediate experience.

Sokolowski further notes that in this process ...when we get into the act of judging, verifying, and reasoning, we formulate meanings and achieve presentations that can be distinguished from our biological and psychological way of being...they can be recorded...confirmed or disconfirmed. They have a kind of substance. They can be shown to be true or false in themselves, quite apart from our subjectivity...we enter into the space of reasons...we transcend our subjectivity; we act as transcendental egos. (Sokolowski, 116)

Husserl’s concern was not so much about the problem of objectivity as with the constitution of the world. Husserl’s central insight was that consciousness was the condition of all experience, indeed it constituted

the world, but in such a way that the role of consciousness itself is obscured...[He] therefore constantly sought to explain how to overcome prejudices which stood in the way of recognition of the domain of pure consciousness...(Moran, 61-62) In the pure consciousness of the individual, the appearance under pre-reflection was not individually subjective, but intersubjectively and transcendently available.

Transcendental intersubjectivity is the concretely autonomous absolute existing basis out of which everything transcendent (and with it, everything that belongs to the real world) obtains its existential sense as that of something which only in a relative and therewith incomplete sense is an existing thing, namely as being an intentional unity which in truth exists from out of transcendental bestowal of sense, of harmonious confirmation, and from an habitualness of lasting conviction that belongs to it by essential necessity. (Husserl, Encyclopedia Britannica, Part 9; Kockelmans, 211)

Only in a radical returning to the things themselves, cleansed of the sediments of the psychological and avoiding the trap of solipsism, removed from limits of scientific ontic fixedness, perhaps even de-objectified and de-materialized beyond the real, was the phenomena refined and primally available to the transcendental ego. As Kockelmans explains, "Generally speaking, Husserl understands that by the transcendental reduction that methodological procedure by means of which we suspend judgment in regard to everything that is not apodictically evident..." (Kockelmans, 215) Strikingly, and somewhat in anticipation of Heidegger's idea of concealment and unconcealment, Husserl suggests these sedimented forms hide the authentic appearance of the phenomena, and in the reduction they disclose what had been hidden. In reduction, there is loss of inessential, but there is a gain: reduction is meant to prevent what we have won by insight being transformed or deformed...(Moran, 146)

As Husserl noted in his Encyclopedia Britannica article:

In phenomenology all rational problems have their place, and thus, also those that are traditionally in some special sense or other philosophically significant. For out of the absolute sources of transcendental experience, or eidetic intuiting, they first [are able to] obtain their genuine formulation and feasible means for their solution. In its universal relatedness-back-to-itself, phenomenology recognizes its particular function within the life of mankind at the transcendental level. It recognizes the absolute norms that which are to be picked out intuitively from [the life of mankind], and also its primordial teleological-tendential structure in a directedness toward disclosure of these norms and their practical operation...in the service of striving...which become free through disclosure. (Husserl, EB, 15; Kockelmans 301-303)

Having placed phenomenology as the gatherer and sorter of other forms and modes of understanding, he establishes a new zone where experience, memory, and possibility are fluid, where substance may be reduced to pattern or flow. In the transcendental reduction the intuitive becomes operative and combinative in free permutations.

Aspects of Architectural Culture Resistant to Transcendence

If the possibility of the transcendental reduction is at all to be made operable for architecture, the kinds of sedimented obscuring forms of knowledge Husserl cautions against must be made clear within the specific disciplines engaged. Within architecture, aspects of history and theory both enable a traditionally accepted form of design but possibly limit the access to the benefits of the freed intuitive. Embedded in the Western heritage of architecture are numerous intersubjective agreements on history and theory, yet a lateral comparison of built work and settings over time reveals not only a slow evolving of the bodies of knowledge, but on occasion revolutionary sets of ideas and artifacts. These conditions of concealment or limitation of resistance to the transcendent are largely based in cultural momentum and position of architecture as built as a conservative trailing art, contrasting with junctures where the situations have allowed for an openness that yielded whole new sets of speculative structures. The limits of the paper allow only a cursory listing of possible strategic conceptual categories and junctures to illustrate these points.

Architectural History and Resistance to Transcendence

In its built forms, architecture is a discipline, which consumes vast economic and material resources, transforms settings sometimes with great violence, and marshals human and mechanical forces. Almost continuously over time, and especially in the West, architecture has tended to serve the elite power elements within societies: the institutions of government, religion, the military and mercantilism. In many of these cases architecture is not a vehicle for overt questioning of these power arrangements; it is the embodiment of the presence of them. As a social art, it continues as a vehicle for them to hold sway within the culture. Indeed, in a way architecture freezes the presence of institutions such that change appears modest if at all over time. So, what will be new is more often a manipulation of preceding models, and trailing other disciplines. Architectural precedent, while informative, and reinforcing established bodies (literally) of knowledge would seem to offer little in encouragement of reduction.

Similarly, in addition to the appearance of the institution, architecture literally enframes the occupancy of the structures. While taken as given, the life-safety issues of architecture, as structure against collapse, of enclosure from environmental extremes, and as safe haven from societal contaminants, are problematic, and risk and reward of change tends to tilt again on the side of precedent, with limited transposition or modification to established practices, even with changes of scalar operations. It is literally safe to stay within established modes and models.

The first available comprehensive and systematic document encompassing the goals and media of architecture is *The Ten Books on Architecture* by Vitruvius', dated approximately 25 B.C.E. Vitruvius' triad of architectural requirements was *firmitas* (durability), *utilitas*, (usefulness) and *venustas* (beauty), and these became, and in some circles largely remain standards that many judge architecture. (Sykes, 33) This work draws heavily from Greek precedents, but including Roman engineering advancements that allowed larger scale and sized structures. Vitruvius related architecture to nature and expanded upon that relation to include architecture and man. His recognition of the human system of bodily proportion was abstracted into a desire to proportion components of a building with each other. The basis for this may or may not have been an alternate way to describe correct structural relations- issues of span, heights of unbraced walls, etc. generating reproducible proven proportions and resultant dimensions. The corresponding aspect may have followed that these were beautiful proportions, beginning a two thousand year correspondence between the pragmatic being raised to the aesthetic in architecture (Leatherbarrow, 38). Order, eurythmy, and symmetry were the underpinnings of beauty. A formal system for controlling architectural operations was seeded for development. Vitruvius is one of the few sources available for a comprehensive model of thought and judgment for almost 1400 years of architectural production. In a time when manuscripts were scarce, architectural knowledge, for what it was and what we can know of it, was largely transmitted by apprenticeship in the building trades. The 'master builder' model held sway.

Despite this array of cultural sediments against invention, one can see difference and modification at the detail and place specific level frequently across the middle ages, but one may also identify a major breakthrough through the Gothic. With the experiments in the Gothic, almost all sense of previous fundamentals is challenged. The church, or individual clergy such as Abbot Suger, provides an opening for this questioning. The wall, the stable container, the overt limit, the shaper of the object, the surface of communication through carvings and symbols, would be challenged by the ability to dramatically light the space. The legacy of arch and vault were set into new tests and permutations. The resultant experiments initiated from Suger's St.-Denis reveal structural, spatial and aesthetic innovation. The groin vault, the Gothic arch, the flying buttress, the vertical limits of proportion in stone, and an expansion of the Christian story into stained glass through perceptual and metaphoric value of light became new paradigms across northern Europe. While no extensive record is known of the decision-making, Suger does deliver these thoughts for our consideration from *The Other Little Book on the Consecration of the Church of St. – Denis*:

Leaning upon God's inestimable counsel and irrefragable aid, we proceeded with this so great and so sumptuous work to such an extent that, while at first, expending little, we lacked much, afterwards, expending much, we lacked nothing at all and even confessed in our abundance: Our sufficiency is of God. Through a gift of God, a new quarry, yielding very strong stone was discovered...there arrived a skillful crowd of masons, stonecutters, sculptors and other workmen, so that-thus and otherwise- Divinity

relieved us of our fears and favored us with its goodwill by comforting us and by providing us with unexpected [resources]...In carrying out such plans my first thought was for the concordance and harmony of the ancient and the new...(Sykes, 45)

Theories of Architecture and Resistance to Transcendence

By the Renaissance, ideas of perspective developed from painting and refined mathematical understandings and relations manifest in the geometry and proportion had taken on an expanded role. Under the initiation of Leon Battista Alberti, representation through perspective and a highly developed system of proportions was the primary definition of a refined humanism. Alberti proposed his system of proportion in *On the Art of Building in Ten Books* of 1486.

I understand a certain mutual Correspondence of those several Lines, by which the Proportions are measured, whereof one is the Length, the other is the Breadth, and the other is Height...The Rule of these Proportions is best gathered from those Things in which we find Nature herself to be most compleat and admirable; and indeed I am every day more and more convinced of the Truth of Pythagoras's Saying, that Nature is sure to act consistently, and with a constant Analogy in all her Operations

(Alberti, Chapter V of Book IX of his *Ten Books Of Architecture*)

With Alberti whole new avenues for thought are gathered under a comprehensive theory, and others to soon follow, with tracts on palaces, fortifications, town planning, commentaries on Vitruvius and exemplified by Palladio with his *The Four Books on Architecture* in 1570. Architectural theory had become a self-described humanistic discourse; certainly an opening for thought, but also casting the possibility of further sediment. I wish to note that this criticism of Alberti and Renaissance humanism is centered on intellectual acts as resistance to a project of method investigating reduction and transcendental intuition. Alberti opens the world of thought for architecture. The relation of the human to the natural is reinforced, and optical means are brought into play in new and striking ways. It is in a kind of intellectual hegemony of visual and mathematical ordering that I am cautious of their current contribution. The fact these issues are raised at all is of enormous value in the discourse of architecture. Proposing a theory that has the ability to project a system of control by mathematical transcendence points to a possible aesthetic formalism that excludes other emerging forms of knowledge and possibilities extraneous from the formal system rules and imposition. A closed mathematical system of order and beauty is teachable, capable of embedment in built and other manifestations of artifacts and gains its own cultural currency by stealth.

One may note the tendency of Renaissance buildings to contain a certain phenomenal flatness- densely developed surfaces and even suggestions of depth and layering of multiple structures into a façade. Indeed, the dominant paradigm in the west is the building made up of four facades. The idea of

architectural drawings looks to the control of composition within a flat surface. It is in the development of the Baroque that surface plasticity is extended into a spatial and experiential plasticity with striking results. While neither Bernini or Borromini, two of the acknowledged geniuses in architecture of the Baroque developed written reflections or guides on their work, Teofilo Gallaccini (1564-1641) in *Trattato sopra gli errori degli architetti* notes among the errors that may be committed in a building, the most interesting are those arising from the failure to take into account optical foreshortening-it is not numerically defined proportion that is decisive, but apparent proportions based on optics. (Kruft, 103) Later Claude Perrault in *Ordonnance des cinq especes de colonnes* (1683) broke decisively with issues of harmonic proportion and noted the conception that certain ratios were *a priori* beautiful, that followed “the rules of architecture”, were agreeable for no other reason than that we are used to them, and advocated a relative aesthetic judgment on other factors. (Wittkower, 144)

The architecture of humanism based on reexaminations of antiquity and the Renaissance held sway for another three hundred years before the inevitable engagement with industrialization and modernism. The limitations of the formalist thinking, buildings looking like other buildings from the past, cast architecture as a trailing art at a time when material capabilities and production methods allowed different thinking. It is no accident that the areas of shipbuilding, where steam eclipsed sail, rail, where machine supplanted animals, aircraft and mechanized production all happened well before comparable explorations in architecture. These opportunities, new freedoms and possibilities were not taken advantage of for years. As Nicholas Pevsner notes, ‘They did not see that the Industrial Revolution, while destroying an accepted order and an accepted standard of beauty, created opportunities for a new kind of beauty and order. It offered to the imagination new materials and new manufacturing processes, and opened up a vista toward architectural planning on an undreamt-of scale...Architects knew little of these things. They left them to the engineers...architect and engineer had become separate jobs for which a separate training was provided. ’. (Pevsner, 388) Reyner Banham’s classic text *Theory and Design in the First Machine Age* begins with the year 1900, 70 years after the first suspension bridges, 49 years after Paxton’s Crystal Palace, and 46 years after Labrouste’s steel interior at St. Eugene in Paris. (Pevsner, 389)

That a mathematical ordering system is now depleted in architecture is far from conclusion. More recent sciences dealing with complex orders in chaos theory, weather prediction, and genetics have fostered a new computer aided computational opportunity where computer based scripts drive derivations and permutations of space and form. A pioneer in this thinking was architect Greg Lynn, who termed the formal opportunities “blobs” and occasional digitally generated anomalies “blips”. (Lynn) Lynn freely admits his Los Angeles location was chosen in 1992 to take advantage of the software available at the time from the animation industry, the technology for production from aircraft and boatbuilding industries in Los Angeles. These are at present more and more available to students of architecture. As the Grasshopper web site notes: “For designers who are exploring new shapes using generative algorithms,

Grasshopper™ is a graphical algorithm editor tightly integrated with Rhino's (another popular architectural software package) 3-D modeling tools. Unlike RhinoScript, Grasshopper requires no knowledge of programming or scripting, but still allows designers to build form generators from the simple to the awe-inspiring." (Grasshopper). Similarly, the explorations of such thinking are available for judgment using new technologies for modeling, where three dimensional printers, using sprayed plastic dust particles covered in adhesive in a similar manner as ink jet printers. This thinking is still in open ended exploration and far from suggesting *a priori* status to the mathematical models, as the architect controls scripting and judges outcomes with the printed three dimensional models, or in the case of grasshopper via an on screen digital model.

Additional manners of formal thinking include the rise of semiotic thinking in architectural circles in the 1970's reacquainted many, some architects view architecture as a form of communication. Here the forms are not mathematically transcendent, but referentially in a system. The referential nature of forms to previous forms sets linguistic analogies into play, and symbol systems akin to language require a stable set of rules and combinations. It also assumes a cultural buy-in as to what these languages are for them to 'make sense' in the abstract to participants. This can be seen across a broad arc of time as the Greek stone temple alludes to the earlier wooden one, the Roman appeals to the Greek, and in the age of Classicism, the appeal again to the forms of ancient Rome and Greece. By packaging these ideas further within codes of 'style', any new information, capability, or possibility is annihilated by the sublimation into support for the communication.

These criticisms all point toward latent Platonic aspects within architecture. The Platonic takes on an object/ontic kind of facticity apart from participation and judgment. As thinker of and producer of art where form is produced, directly or indirectly, the architect treads a fine line between the object and the phenomena associated and gathered by its manifestation. Privilege of form as *a priori* beauty, architecture needing to gain its aesthetic legitimacy from transcendental fields such as mathematics, or social sciences, or even other arts seems to indicate a discipline unaware of itself and its own media. While proportions may derive from human dimensions, the dimensions are seen and apart from judgment. While communication may call to mind the idea of the individual as participant within architecture, the individual is subject to the learned system, a constant listener, not a speaker to it, manipulator of it. One of the great contributions of phenomenology as developed across the twentieth century was its fundamental allegiance with existence at a profound level. "One of the main tasks of phenomenology is to work out, in detail, from the transcendental attitude, how our various senses and mobilities work to establish our own corporeality." (Sokolowski, 127) A phenomenology of architecture cannot exclude our corporeality, and cannot deny entry to the infinite variety of materials, processes, flows, abundantly with but concealed by sedimented controlling ideologies.

Media of Architecture: Materialism as Open, Epistemologic, and Transcendent

If Husserl has asked the architect to return to the things themselves, what exactly would they be within the discipline? Clearly the built work has a reality, it stands before us whether in dawn, clear mid day sun, spring mists, or winter snows. I grasp a lever or handle of an entry doorway. I enter the structure and it changes my world; perhaps tacitly, subliminally, as in the thinking of Michael Polanyi (Polanyi, 139), or perhaps profoundly with its changes of scale relative to my body, flooding the space with light or whispering from candles. The space may be articulated in the light or made obscure by the shadow. My footsteps give a second sense of touch and I may feel my weight slightly displace a wood floor or footsteps echo off a stone surface. Clearly the pieces of which it is made have been altered in a transformative process, brought by extraction from the earth, burned at thousands of degrees of heat, formed, and shipped sometimes across the world. They may also be local, formed of the earth itself or made from trees that had been on the location. Clearly when I approach the structure I have intent, I have expectation, whether to engage a productive meeting, purchase a computer part, or escape for a brief lunch away from my desk. I may be simply engaging the architecture as passage from one discernable place to another, but I have intent. In these ways architecture presents itself as a material fact, but also as a material phenomena, an embracing thing in its phenomenal spatialness where qualities of space as things are engaged by phenomena of the things of its containment and porosity, phenomena of light, temperature to my skin, phenomena of sound and smell. It is far from a static object, as it reveals itself with the moves of sun and changes in season. It weathers and changes again over my years with it. It appears in my consciousness in expectation, in memory, as well as a myriad of symbols to aid in negotiated participation. In my consciousness I may bestow affection upon it, it may attain the status of architecture, it may become place, and it may anchor key events in my life or simply allow me to live the life I wish to live. Whether I engage the work as a traveler encountering it as a pilgrimage or glance and change my path due to a tacit calling, whether I inhabit it daily for a few minutes or it is my inhabitation for hours or days at a time, the structure of the engagement with the architecture as phenomena is apodictic. In a work of architecture the phenomena have been gathered or set in motion, some times intentionally by the design process, the architect (including the myriad of consultants), and the ideas that initiated the work. The phenomena may be as literal as 'granite', as ethereal as the particular shine off a piece of stainless steel, or as immaterial as the apparent way the sequence of experiences or path seems to set up a coherent journey across my engagement from entry to terminus, but all exist as evidence.

Husserl felt his science depended on such forms of evidence. In the Logical Investigations he notes all genuine knowledge rests on *Evidenz*- cognitions given with insight as opposed to blind faith (Moran, 95). Evidence assumes an ability to verify. The self-evidence of architectural media is more elusive than one may think, but inherent in the search is also the opportunity.

The literal material of the work are seemingly the easiest to verify. Stone, steel, glass, wood, seem self evident due to their commonplaceness, but placed into the design process the architect quickly discovers what the layman only tacitly may suspect. None of the materials within the construction is a thing of itself. Each has been transformed in many operations from another context and setting. The thing seen within a work may be a highly refined version of the source material, such as the alabaster stone architect Raphael Moneo used in the Cathedral of Our Lady of the Angels in Los Angeles, where cut with the precision of new capabilities of mechanical processes to 1.5 centimeter thickness, is rendered translucent. (Cathedral) Similarly, a material which seems monolithic in its nature may be a composite made from sometimes hundreds of mechanical, chemical or increasingly, biological operations. The recent technological breakthroughs across scientific and construction product disciplines over the last twenty years have produced more newly available individual material choices than occurred over the two thousand years previous (Brownell, 6).

Gottfried Semper's materialist theory, developed in 1851 in *Die Vier Elemente der Baukunst* looked to categorize materials apart from the classical ideas of Vitruvian thinking. In comparing vernacular work around the world, he developed a four-part gathering of material types: earthworks, hearth, framework and enclosing membrane. These were divided into two operational groups: the *tectonics* of the frame, where lightweight components are assembled to provide the spatial matrix, completed by the cladding, and *stereotomics* of the heavier elements of earthwork, and materials of mass taken from the earth such as brick and stone. (Frampton, 85) While this broad taxonomy of light and thin construction has maintained much validity, and the idea of *tectonics* in general has had a great influence over thinking of the last twenty years, the profound expansion of materials and material capabilities has overwhelmed such attempts at categorization. Today, with the added societal concerns for sustainability, materials such as rice straw bales that may have stereotomic formal characteristics behave more in structural practice as light cladding. Structural plastics maintain lightweight cladding, lightweight structure, and formal stereotomic characteristics.

The materials themselves and the way the works re-presents them may have no clear trace of former contexts or operations. We take glass as sand for granted, but do not sense it; a "window" may also now include layers of glass, chambering exotic chemicals for thermal resistance or phase change materials for turning transparency to opacity for privacy. Recyclable claddings, genetically modified plant materials akin to a high tech version of re-thatching, are just around the corner. The "cradle to cradle" material ethic of William McDonough suggests any material be considered from its origin through use and through recycling and potential reuse. (McDonough) Most recently another iteration of the legacy of the industrial age seems to be in formation where, with computer driven machinery, rather than counting on a small set of modular or mass-production pieces and options entering the consideration as the basis for material

selection, “versioning” where project specific material fabrication and multiple permutations are available at the local level is an emerging at the local level as well as international scale. (SHoP)

The materials themselves retain a facticity of structural capability, weight, volume, and cost, but are well beyond these categories in the why of their selection. The architect has gathered them, not so much as materials per se, but for their gathering of attributes and characteristics and phenomena about them and their interlacing of these patterns and attributes with those of others. For the architect, where a material begins its presencing and where it moves to background or ends its presencing is part of the material in service to an idea.

The idea may be a kind of deconstruction of the material- removal of some authentic aspects to reveal others, such as the way bark may be removed from a fallen tree to access the stronger less volatile core. It may be an enhancement through operations such as a stain or coating to protect and extend a characteristic such as wood grain quality. In the hands and consciousness of the architect, the thingness of the material is always an opening for rational lateral thinking, a drawing out of memory and experience, and displacing of conventional thought of a material. To do so, one must suspend judgment of what a thing is while retaining what is essential for that thing to exist. Through materials the architect is given access to a specific world making that will entail a reality with the things and through the things, but that has crossed the logics of multiple epistemological zones. Logic for Husserl meant a return to the bestowing of sense which occurs in the lived experience of logical thinking...a turning of intuition back towards the logical lived experiences which take place in us whenever we think ...the thinker knows nothing of his lived experiences of thinking, but only of the thoughts which his thinking engenders continuously. (Moran, 93)

There is conventional knowledge, a social formation of intersubjective judgments that disciplines find appropriate. There is the ontic knowledge revealed by sciences that contribute to objective classification and reliability. There is the knowledge revealed by the architect's direct immediate experience, but also the knowledge revealed and acquired by the experience of the hand, and as a prosthetic to the hand, devices. The materials have their own characteristics that form a resistance to a complete understanding. The things exhibit a capacity to be interrogated directly through processes to the point of destruction. The things have limits, but it is not always evident from era to era what they may be. The things in themselves are capable of sustaining and enabling new forms of knowledge. This is point where it seems to any architect that by their nature, by their training they are practicing phenomenologists. Phenomenology thus helps the partial sciences and the natural attitude by clarifying their partiality, by bringing out what is absent to them, and by showing that what they identify can be seen from perspectives they do not enjoy. (Sokolowski, 209)

In the design and construction processes, architects begin with something real and they end with something real. The real is not self evident, but makes itself available for disclosure. In between the architect may be dealing with alternate states of this reality. The ideas of ontic reality, critical reality, speculative reality, and other possible forms of realism while in the sense of philosophy are doctrinal, categorical, and specific, in the design process are not exclusive to each other. In addition to these forms of the real the architect needs the additional freedom to move into the transcendental. Husserl's transcendental reduction seems necessarily embedded within the kinds of design thinking that the challenges of the twentieth century posited. The world of the architect is the capability to displace, replace and enhance. The reduction allows the freedom for possibility within the arc from real to real, while never leaving thingness. Regardless of its ontological status after the reduction, the world as phenomena is not nothing...together with the entire stream of experiences that constitute my life...I cannot take any position in regard to the actual being of objects meant. All this, too, is to be taken only as a mere phenomenon. (Kockelmans, 217) What are left after the transcendental reduction are thus not a bare *ego cogito* of the designer, but an infinite realm of transcendental experiences that constitute the life of transcendental subjectivity. (Kockelmans, 220) The thingness, whether as phenomena or possibly as the collection of qualia which constitute the transcendental thing always are retained. They have always been there for consideration, but hidden by the sedimented processes. Architectural design is a form of dance across actual and potential.

Phenomenal, Epistemological, and Ontological in Architecture

As noted by Husserl in his 1928 *Encyclopedia Britannica* exposition of phenomenology, there are possible interweavings of transcendental phenomenology with ontology. While it may be possible to conceive that the intersubjective transcendental is accessible at all locations and junctures along the architectural design process, it may be more appropriate for the real-to-real arc at the point of conceptualization. If one accepts that there is also a corresponding continual epistemological opportunity as well, then architecture is more than physical objects, its "objects" of focus can be the investigation of and manipulation of the media of architecture. Form is a result of ontological investigative forces vs. accumulations of Platonic forms. This is the basis for design-as-inquiry, design as a form of knowledge, a form of research which a key concept that requires embedment within any teaching of architecture pedagogy. If it begins with real natural and social setting, real program, real costs, real time for execution, and if it ends for the process in the work realized, then the place for the transcendental reduction is midpoint in this arc. The factual and phenomenal grounds of the work may be collected at the inception, but at some point the search for the conceptualization of what would gather the disparate things takes place. At this strategic point, the reduction could proceed, for as Kockelmans notes, "None of the methods used by the other sciences can be of any value here. Whereas they have to presuppose something in addition to the actually given, in the field of primordial phenomena characteristic of

phenomenology, presuppositions are simply inconceivable. In the field of original phenomena, the fundamental principle is that every primordial, giving intuition is a legitimate source of knowledge, that everything which presents itself to us primordially in “intuition” –in its body reality, so to speak- is to be taken simply as it presents itself to be, but only within the limits in which it presents itself. (Kockelmans, 14)

Phenomenology focuses on what appears in intuition, apart from logic, or other mediation- experience in its purest manner to have knowledge is to be able to access or repeat steps through to the original evidence. To know something is to be able to verify it, by tracing it back to some evident experiences, which ground it fully. (Moran, 96)

In the reduction, one is not leaving the real so much as going to the point of essential and point of origin behind what constitutes our sense of real. Husserl notes phenomenology as science of origins. (Moran 137) In doing so, one places oneself in the sphere of “absolute clear beginnings”.... independently of any prejudice...one learns to see things in a more original and radical way, to penetrate into things and see there the more profound layers of meaning behind those that first appeared (Kockelmans, 14)

In the process of reduction what appears are the phenomenal essences that are and always have been available. Here “essences” or “ideas” mean not the “empirical generalities” that with the types encountered in experience but rather “pure generalities” that place before our minds pure possibilities whose validity (as phenomena) is completely independent of factual experiences. (Kockelmans, 15) For the architect the reduction is a creative event; “To experience the reduction is to experience the enrichment of one’s subjective life-it opens infinitely before one.” (Moran, 147) In the conscience of the architect actual existence is suspended as unimportant- memory, fantasy, and other forms of attention can disclose as many acts of perception as factual experience. Moran notes: “Whether I am dreaming or am awake, I am experiencing cogitations, ‘thoughts’ in the wildest sense, and these can be examined so that essential structures of both the acts and the objects of the acts can be disclosed. The whole world becomes for the reduced consciousness a field of possible experiences. Husserl drops reference to the actual world, to factuality.” (Moran, 153)

With his example of the reduction of a table- a tangible thing we may relate to, Husserl gives a glimpse into the power of aspect of the eidetic reduction as starting point for imaginative free variation:

Starting from this table perception as an example, we vary the perceptual object, table, with a completely free optionalness, yet in such a manner that we keep perception fixed as a perception of something, no matter what. Perhaps we begin by fictionally changing the shape of color of the object quite arbitrarily...in other words, abstaining from acceptance of its being, we change the fact of this perception into a pure possibility, one among other quite ‘optional’ pure possibilities-but possibilities that are possible

perceptions. We so to speak, shift the actual perception into the realm of non-actualities, the realm of as-if." (Husserl, *Cartesian Meditations*, 34, 60; Hua I 104)

Husserl extends this free variation into the idea of horizon. Within any perception or experience, there is a lateral capability to expand, project, multiply, and modify the originating experience. Every designer recognizes this as the kind of point of origin of an idea. It is here that having gone through the reduction of the situation(s) presented, that the idea to be affirmed as it re-enters dimension and materiality may be contested and appraised. It is here that I suggest that Heidegger begins his circular verbal wrestling that makes up *The Origin of a Work of Art*.

Dasein and Design: The Act of Making as Transcendent

The idea of a phenomenological reduction does not takes the participant to a "near zero" condition, but a place of clarity apart from the noise or clutter associated with the sediments about the real. Apart from naturalized concepts and logic(s), there is then a sense of freedom to further interrogate the phenomena thing relative to new relations. Husserl implies all objectivity is objectivity for consciousness-the move toward the reduction. This allows a freeing activity within ideation to proceed. At a point in the free combinative, the architect can proceed with making as testing and verification, moving back toward the realization of the work. (Moran 141) This is the point that for Husserl he has made his point for the reduction. The thinker, the designer, the architect has been freed. But for the architect, unlike the philosopher, the realization of the work is requisite. The path back from the transcendental reduction is not clear in Husserl's writing. Application may have been seen as discipline specific. This is where the work of Heidegger, and specifically *The Origin of a Work of Art* is helpful to re-ground the arc of the architectural process.

Heidegger and issues within the transcendental is a difficult problem. but open to recent inquiry. Jeff Malpas and Steve Crowell note: "Following Nietzsche, Heidegger begins to see that a more positive characterization of self-transcendence, and of thinking, is blocked by the scientific pursuit of truth itself, which has no room for many forms of experience-of the beautiful, for instance, or the good-that, consequently, seem to disappear from the science-dominated world. Heidegger's late thought then, can be seen as a continuation of the pursuit of transcendence that attempts to do justice to these excluded experiences in an age that puts roadblocks in the way of such reflection." (Crowell, 6)

Hofstadter notes Heidegger's idea of thinking around things: "...this means to exist as a human being in authentic relationship as mortals to mortals, to earth and sky, to divinities present or absent, to things and plants and animals; it means to let each of these be-let it presence in openness, in the full appropriateness of its nature- and to hold oneself open to it's being." (Hofstadter, x) The key phrase here is "let be". The architect cannot simply let things be- they are gathered. John Haugeland suggests the "let

be” may entail as many as four implications: acquiescing (lack of struggle), allowing (permit), enabling (make possible), effecting (make something be). (Crowell, 94) These fluid ideas of “let be” ideas allow a proceeding from the phenomenal within the transcendental toward the specific. Care will be taken that nothing essential will be lost, but clearly what is “letting be” is in motion.

In *The Origin of a Work of Art* Heidegger deals with things and works of art and their establishment, or more so the act of their establishment through the thinking, operations and tools of the artist, whom I will directly translate to architect. His example of the painting of peasant shoes and the direct architectural example of the Greek Temple in its setting, each in their own way gathering worlds are instructive. “The work as work sets up a world. The work holds open the Open of the world. But the setting up of a world is only the first essential feature in the work-being of a work...” (Hofstadter, 45)

Heidegger establishes an important triad in this process, the architect, the idea and the work. The work is the evidence of the relations between the three. “The thingly element is manifestly the matter of which it consists. Matter is the substrate and field for the artists formative action...the distinction between matter and form is the conceptual schema which is used, in the greatest variety of ways, quite generally for all art theory and aesthetics.” (Hofstadter, 27) Heidegger with Husserl is also concerned with the kinds of sedimented knowledge concealing the possible; “...preconception shackles reflection on the being of any given entity. Thus it comes about that prevailing thing-concepts obstruct the way toward the thingly character of the thing...and all the more toward the workly character of the work.” (Hofstadter, 31) The act of making is a central theme in *Origin* “When a work is created, brought forth out of this or that work-material- stone, wood, metal, color, language, tone- we also say it is made, set forth out of it...because the work’s work-being consists in the setting up of a world, so a setting forth is needed because the work-being of the work itself has a character of setting forth, a making.” (Hofstadter, 45) Heidegger states “...we are able to characterize creation as follows: to create is to cause something to emerge as a thing that has been brought forth. The works becoming a work is a way in which the truth becomes and happens. It rests on the nature of truth... truth is un-truth, insofar as it belongs to it in the reservoir of the not-yet-uncovered, in the sense of concealment. In unconcealedness as truth, there occurs also ...a restraint or refusal.” (Hofstadter, 60) Kockelmans notes within Husserl’s concepts a similar anticipation away from subjective ego toward world: “...the relativity of everything in regard to consciousness applies not only to our own de facto world, but in eidetic necessity also to every conceivable world whatever. ...if we vary our factual world in various ways in our imagination and thus carry it into over into merely conceivable worlds, we implicitly are also varying ourselves, whose environment our world is: we each change ourselves into a possible subject, a subject whose environment would always have to be the world that was perceived or thought, that is to say, a world of the subject’s possible experiences, its possible theoretical experiences, and its possible practical life. (Kockelmans, 186)

This making is the architect's conceptualizations being manifest in the resistance of material to certain kinds of form, but welcoming others. The intentions, made manifest through the work are constantly available for judgment. The work in process via making, whether computer realization is a two – dimensional representation of a three-dimensional thing, whether in a gathering of material samples, whether in large scale mock-ups of possible construction and space, are deemed available for judgment. The judgment is not solipsistic, as there is an intersubjective aspect to client, community, and colleagues. The work is not linear in development. This work-as-work evolving from idea-of-work is not perfect transition, it is difficult. Heidegger uses words like “strife” and “conflict” in his descriptions. While sources for ideation may come from a transcendental source, the translations into work across the realms of the realized work may require re-ideation or additional searching among options. The core principle is not that the transcendental delivers a perfected work, but that it merely opens the work to the imagination such as to engender the fullest possible opportunities for the realization among the possible. The goal is to raise the realization of the architecture to the level of art. As Heidegger states: “Art is the origin of the art work and of the artist...What is art? We seek its nature in the actual work...But what is thus at work is so in the work.” (Hofstadter, 57)

The architect, having emerged from the transcendental source has engaged the matter and manifested the ideas through the forms in dialogue with the resistances of the matter and materials. The work emerges and takes its realization. Heidegger cautions that this process is far from over. The architect must now yield to the work being the conveyance of idea gathering the phenomena, the trace of operations and as thing-in-itself. There is no room for the ego or rationalization. The work is the evidence of what is brought forward. “The emergence of the createdness from the work does not mean that the work is to give the impression of having been made by a great artist. The point is not that the created being be certified as the performance...Rather...namely this, that unconcealedness of what is happened here...this ‘that it is’ of createdness, emerges into view most purely from the work...the work casts before itself the event-ful fact that the work is as this work, and it has constantly this fact about itself.”

(Hofstadter, 65) Similarly, Sokolowski echoes the compatibility of Husserl's “absence” with Heidegger's “unconcealment”: “through the doctrine of intentionality Husserl was able to say that we actually intend things that are absent. It is not the case that we deal only with immediate presences...Human thinking is such that it transcends the present and intends the absent...This theme of absence was, I believe, a stimulus to Heidegger's notion of unconcealedness as involved in truth. (Sokolowski, 217)

Further, the built work is not, despite its facticity self evident, it must be allowed time for its being to be accepted among being. Heidegger suggests that only in the intersubjective appreciation among the beings in the world as brought forth is the work finally brought into reality. As Heidegger continues, “...the works reality does not exhaust itself even in createdness...the work itself is transported into the openness

of beings-an openness opened by itself-the more simply does it transport us into this openness and thus transport us out of the realm of the ordinary. To submit to this displacement means: to transform our accustomed ties to world and to earth and henceforth to restrain all usual doing and prizing, knowing and looking, in order to stay with the truth that is happening in the work...This letting the work be a work we call preserving. It is only for such preserving that the work yields itself in its createdness as actual, i.e., now: present in the manner of a work. Just as a work cannot be without being created...so what is being created cannot itself come into being without those who preserve it." (Hofstadter, 66)

In *The Origin of the Work of Art* Heidegger takes the realm of ideas and associations from the consciousness of the artist, shows the efforts necessary of the architect in transformation of matter and material with respect to form. The care of tending to the nature of the materials and phenomena they gather is crucial to the work being able to take its place in a new world setting. The work is turned over to the beings-in-the-world for their opportunity to experience what the architect was able to envision. The gathering of the phenomena and experiences enabled by the work has the potential for the generation of affect for the work, and provides its ultimate realization, not in its facticity but in its unconcealment of what had been hidden by thinking, processes, and other things in the previous world.

This realization completes the process initiated by patron or community where the world was found inadequate. By creating an arc from one reality to the next, the transcendental reduction plays a role in actuating possible worlds. There is no romance with a promise of continuous Hegelian progression of new architectural works, but the revolutionary possible interrogating the sedimented conventional allows for more of an open dialogue for the potential. While not negating the forms of knowledge within other modes of thought, a methodology that includes phenomenology allows each form of knowledge to verify what it is capable of verifying and withholds the role of factual negation from a process that includes the intuitive.

Architecture as discipline paired with the influence of phenomenology shows how perception should not be understood as a barrier between ourselves and things, and how things can be given in various perspectives and still maintain their identity; it examines the interplay of presence and absence in all our experiences and possible futures. One does not prove realism...one displays it. (Sokolowski, 216)

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