

The Sense of Architectural Constructs in Research

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Abstract

In architecture science and art meet each other in the design process. In most architectural practices designing implements both scientific knowledge, gained from unified observations of the world, and poetic knowledge gained from embodied experiences in the world.

Architectural research has an established tradition in the development of scientific knowledge in the fields of technology, construction, history and theory. But other modes of knowledge production remain relatively uncovered. The research presented here aims to articulate the potential of the *architectural construct* towards poetic knowledge production by blurring the distinction between intelligibility and sensibility and treating the ideal and the material as one continuous heterogeneous field. It is in the liminal zones, the in-between that things meet, interact, reverberate, where encounters take place, and we expect the architectural construct to position in the milieu to stage these encounters. The *disruptive encounter* will be discussed as a specific type of sense making involving a co-development of theoretical perspectives and creative making processes. *Poetic measuring* will be presented as a tactic for staging encounters, recently developed within the research group *Radical Materiality* at the KU Leuven, Faculty of Architecture, campus Sint-Lucas Brussels.

KEYWORDS: materiality, architectural constructs, sense making, encounter, poetics

Poetic knowledge building in architecture

Architecture has a longstanding tradition of operating in the *milieu* of science and arts. In academic research however, architecture is often approached via one of its privileged partner

disciplines like technology, sociology, and history. This type of research is strongly embedded within the modern scientific research tradition. With its strong claims on universalism this scientific method, referred to as Newtonian-Cartesian science, assumed a position of dominance in the structure of knowledge of the modern world-system (Wallerstein & Hopkins, 1996). Nelson Goodman states that although "...the ultimate product of science, unlike that of art, is a literal, verbal or mathematical denotational theory, science and art still proceed in much the same way with their searching and building" (1978, p. 107). There is generally a strong tendency in research to base all kinds of knowledge production on *measuring* and *evidencing*. Although the art dimension of architecture has been object of research in this evidencing mode, the actual knowledging potential of design thinking and acting has gradually gained more interest as knowledge production of a different kind, possibly not fitting the measuring and evidencing mode (Janssens, 2012; Hendrickx, 2012).

The argument and concepts presented here are developed within the research group *Radical Materiality*. In general terms this research unit aims to question matter as an *actor* (Kärrholm, 2013) and materiality from a mainly *practice-based design experiential perspective*. This theme, as we see it, represents a content that is basic to both architecture and the arts: every artistic discipline aims at placing something (artefactual) in the world such that it moves us; at (re)structuring matter in order to enhance its capacity to touch us. From this *materialistic* perspective the research unit investigates the actual knowledging potential of design thinking and acting in architecture, which we refer to as *poetic knowledge building* (Janssens, 2012)

It seems that the notion of poetics is (re-)emerging in the knowledge landscape, meaning that besides the dominant analytical, instrumental and technological perspective on the world, there is another that we might call *poetic*. From an etymological perspective poetics is rooted in the Ancient Greek word *poesis* and includes the notion of a making, acting, bringing into being, as well as a making up, making in mind, referring to Aristotle's *nous poetikos* or the *active mind*. This implies that the term poetics does not refer to a theory of poetry, but refers to a much broader field of knowledge of relations between matter and thought that might inform methods, ways of acting, feeling, thinking and producing in different fields. By affording approaches that operate between matter and thought poetics blurs this so-called dichotomy between the material and the ideal into one continuous heterogeneous field of knowledge production.

Poetics concerns itself with the fundamental and primary intelligence that *immediately* grasps reality in all its available dimensions, or, put differently, it concerns itself with the fundamental dynamics of thought *before* the elaboration of systems (White 1994, McManus 2007). This primary intelligence relies on our sensibility to efficiently form global intuitions of the nature of the environment in which we are immersed.

I enter a building, see a room, and – in a fraction of a second – have this feeling about it. We perceive atmosphere through our emotional sensibility – a form of perception that works incredibly quickly, and which we humans evidently need to help us survive. (Zumthor, 2006, p. 13)

Considered this way poetics seems closely interrelated with Bergsonian intuition as “*the kind of intellectual sympathy by which one places oneself within an object in order to coincide with what is unique in it and consequently inexpressible.*” (1912, p. 7) Even if the uniqueness of an embodied empathic experience renders it inexpressible, it is precisely this uniqueness that pervades our experience of the heterogeneous, interconnected and complex mixture of reality and gives it a sense of *irreducible* unity.

An experience has a unity that gives it its name, that meal, that storm, that rupture of friendship. The existence of this unity is constituted by a single quality that pervades the entire experience in spite of the variation of its constituent parts. (Dewey, 2005, p. 38)

Bergson opposes intuition to analysis as “*the operation, which reduces the object to...elements common both to it and other objects. To analyze, therefore, is to express a thing as a function of something other than itself.*” (1912, p. 7) This differentiates scientific and poetic modes of knowledge production respectively as reductive and *non-reductive* where scientific knowledge is deduced from unified observations *of* the world, and poetic knowledge *constructed* from embodied experiences *in* the world.

Poetic knowledge thus is a mode of non-reductive knowledge responding to the increasing acknowledgment that there are circumstances in which reality is both unknowable and generative, implying that realities are to be made and remade rather than discovered, as most scientific methods assume. Bringing science and poetics back together, is in essence about reuniting the fields of knowledge and experience and involves a search for a renewed sense of *logos*. It necessarily implies the emergence or creation of another epistemology, another way of building knowledge, the making of methods that escape from the postulate of

singularity and universality and respond creatively to a world that is taken to be composed of an excess of generative forces and relations (Law, 2004).

The encounter, sense making and architectural constructs

Poetic knowledge building is a type of research that is mainly oriented towards *encountering* as a method of knowledge production. What an encounter with an environment affords us are capacities to affect this environment coupled to capacities to be affected by it. This pre-personal, real but virtual potential is often addressed as *affect* in Deleuzian philosophy (De Landa, 2002) or *affordance* in psychology of perception (Gibson, 1977). The actualisation of this pre-personal potential entails a reduction of intensities by our senses, while, at the same time, inscribing the experienced into our conceptual framework expands the resulting stream of perception. This conceptual framework proposes a genetic account of *real experience* that revolves around encountering intensities: the encounter is characterised by intensity.

Encountering thus is related to an experience were the perception of, let us say, a poem as a physical artefact with sensuousness of rhythm, sound wave pattern, *Wortbild*, whitespace... is irreversibly fused with the perception of an artefact with a significance, signification, associations, conceptual blending... into a singular poetic experience of an hybrid artefact that is essentially both material and conceptual at the same time. A poetic work unites matter and time with thinking into a singular whole that connects the poetic experience directly with a process of *sense making*.

Sense making is a central strategic operation in the context of poetic knowledge building because it involves both the making of sense as the attribution of significance and the activating of the senses. Moreover, sense making can be considered a type of theory building since it is an active two-way process of fitting data into a frame and fitting a frame around the data. In this hermeneutic circle neither data nor frame come first; data evoke frames and frames select and connect data (Klein et al., 2006). However, when sense making is related to poetics the theory building does not stem from an absolute, disembodied measurement of experiments that provides empirical evidence. What happens is a co-development of theoretical perspectives and creative processes of the making.

The sense making process arises when an *encounter* with a *block of sensation* destabilises our faculties and beckons our sensibility to grasp intensities (Deleuze, 1995). This *disruptive*

moment where time breaks free from simple repetition initiates a process of *accommodation* (Piaget, 1968) to an unbalance between internal mental schemata and unanticipated and novel experiences. It opens us for new experiences or thoughts that do not passively assimilate or re-cognize what we already know, but forces us to actively accommodate our conceptual structures. There is an important role for the arts to create sensory aggregates that stage these encounters (Deleuze, 1995). We state that in architectural research it is the *architectural construct* has this role to play.

We define an architectural construct as an *artefactual reality*, developed and constructed with the aim of sense making in the field of architecture through staging the encounter. We engage in the making of architectural constructs as a method of probing the fundamental functioning of architecture in order to develop theory *in* architecture. The architectural construct offers a very concrete and materialised medium for the invisible forces, the intangible experiences and the abstract idea (conceptualisation) to come into being and to become intelligible through the act of form-giving (Janssens, 2012).

In the following part *Poetic Measuring* will be presented as a possible tactic for staging encounters. Two different samples of architectural constructs will serve as concrete cases to substantiate this tactic.

Poetic Measuring

While executing a number of architectural constructs, more specifically a series of site specific interventions and installations, we recently identified a recurring interest for exploring *material artefacts as a catalyst or actor in a process of embodied exploration of specific qualities present in these artefacts and the context in which they are placed*. To capture this specific approach and the role it might play in the process of conceiving, making and experiencing, we intuitively named it: *poetic measuring*. This act of naming is not categorical but operational: it is intended to facilitate a prise de conscience (by turning more unconscious processes into more conscious ones), a contextualisation (by identifying similar and contrasting approaches in earlier works by ourselves and others) and a deepening (by more consciously implementing the approaches in new reflective and creative actions). The assigned name contains an implicit friction that already initiates a series of reflections in itself.

The act of measuring that is pervasive in research within *all* disciplines explicitly belongs to the dominant scientific desire for universality, unambiguous findings and predictability and is based in analytic thinking. Poetics that are uncommon in research within most disciplines are drawn towards particularity, ambiguous relations and creativity (the emergence of the new) and is based in associative thinking. Relating poetics and measuring seems a contradiction in terms. Yet, as often is the case with an *oxymoron*, the contradictory juxtaposition destabilises and displaces its terms. It opens up a metaphorical space that beckons us to reframe the terms in terms of each other. Since measuring entails activities of measuring, instruments for measuring, levels of measurement, units of reference, and so on, we are prompted to remap these terms in terms of poetics. Poetic measuring then reframes encountering as an activity of measuring, the body as an instrument for measuring, intensities as levels of measurement, embodied memories of earlier experiences as units of reference, and so on.

This suggests different forms and situations of poetic measuring were the designer, artefact or the observer does a form of poetic measuring: a designer might perform an act of poetically measuring an artefact or site, an artefact might poetically measure (by framing, strengthening or reducing poetic qualities) an artefact or site, an observer might construct his own poetic measure by means of his actions. As one can imagine, these different forms of poetic measuring are all interwoven and are addressed - sometimes explicitly or sometimes implicitly – in each work but the enumeration helps as a guideline to build our case by starting from a simple explicit case and moving gradually to more complex implicit cases.

A Mundane Case: *Encountering Trees*

We internalize our knowledge of our environment and how we personally relate to it, by means of cognitive structures – schemata – that originate from action in this environment. Linking knowledge and action hence equilibration (Piaget, 1970): a constant dynamic and bi-directional process that aims at attaining a balanced relation between internal schemata and the experiences resulting out of actions. This way our nervous system in our brain does not form representations of the world but form representations of our interactions with the world. This interaction is always mediated by the body, which is always implicitly present in mental representations, in that sense all aspects of cognition are shaped by aspects of the body. This has led contemporary researchers in neuroscience (e.g. Berthoz, 1997) to frame perceiving as mentally simulating our interactions with the perceived environment.

There are many elements in our environment that we often perceive in a specific way: vertical elements like towers, cranes, electricity poles or a trees by looking up from the ground to their unreachable summit. When we are walking through a forest and suddenly come across a full grown tree lying by the road we suddenly have a different bodily relation with the tree trunk. By walking along the trunk, our proprioceptive sense, informed by the feedback of our muscles, gives us new insights in the physical meaning of the height of a full grown tree. This embodied experience of one singular tree might then trigger an accommodation of our internal schema of all jet engines, trees and maybe even scale and verticality or length in general.



Figure 1 Fallen Monarch, Sept. 15, 1911, Mariposa Big Tree Grove.

This process of encountering things from a different bodily perspective is implemented as a design tactic by Belgian architect and artist Luc Deleu in a series of works called *Demonstration of Scale and Perspective* (1985-1988). In this series of works familiar vertical infrastructural artefacts that we come across almost every day like an electricity pylon, a building crane, or two highway streetlights are placed in horizontal position on a public square or in a hangar, *staging an encounter* with a familiar object placing it in an unfamiliar position, by means of enabling a poetic measuring of the familiar object. This tactic entails a material displacement that has an impact on mental structures on many levels much like for example the displacement as contained in Marcel Duchamp's ready-mades. There are however also clear differences: where in Duchamp's displacement the ready-mades (e.g. a urinal) and the context (a museum) seem mainly selected for their conceptual significance in provoking a reframing of art, in Deleu's displacement the mundane infrastructural artefacts and urban contexts are selected for their material significance in provoking a reframing of the artefacts themselves. For example, as horizontally placed vertical elements, they are not as much selected for their conceptual as for their experiential potential and this selection does not aim as much at affecting us conceptually as spatially.



Figure 2 Three installations (f.l.t.r.): Scale and Perspective, 1981; Demonstration of Scale & Perspective, 1986; Scale and Perspective 2, 1986 all by Deleu.

Poetically *measuring* a site

A design proposition for *Isopleth* (Wim Goossens & Arnaud Hendrickx, 2014), an intervention in the grassy plains in front of the Belgian castle of Horst, consisted of a very minimal architectural gesture: providing a stable floor within the slightly marshy surroundings. Providing a horizontal pitch of concrete that might serve as a stage and read as a palimpsest within its historically charged surroundings. To be able to position this horizontal concrete slab within a plain with very subtle difference in elevation we were looking for means to *understand* its topology. Since the perceived (embodied) topology differed completely from the measured (disembodied) registration (we became aware of differences in height between the perceived and the measured of 75 cm on a distance of 100 m), we started exploring the subtle differences in the topology by constructing lines that connected points of equal height, so called contour lines, in relation a reference datum provided by a very precise digital siphon. The actual act of physically measuring the site revealed unpredictable twists and turns in the curves, by which the surface structure of the grassy plain only gradually revealed itself, often contradictory to what we expected. This process is an example of a designer performing an act of poetically measuring a site. Even when the actual measuring process is explicitly documented when presenting this work, it is, in this case, only implicitly articulated in the final materialisation. The final result seems to have other ambitions: being an artefact that highlights a diffuse property of the site, a device for poetic measuring.

Devices for poetic measuring sites.

The process of measuring described above somehow relates to how a liquid like water forms

an assemblage with gravity and the earth's surface. In a process of optimisation the water *explores* the grassy plains and forms an organically shaped horizontal plane that connects points of equal height informed by the specific *micro-topology*, in short, the water assembles in a puddle of water. So when at a certain point in interesting contour line was traced, it seemed interesting to stratify the contour line by pouring concrete. The process of poetically measuring the site resulted in a puddle of concrete whose shape and edges are determined by the differences in relief within the plot of grass. The concrete puddle renders invisible and implicit properties of the grassy plain visible and explicit to an accidental passer-by. This is an example of how a material artefact becomes a poetic measure of a site and how this artefact strengthens diffuse and implicit qualities of a site.



Figure 3 Details from an architectural construct: (f.l.t.r.) the physical measuring, the informed shape, the measured site of Isopleth, 2014 by Goossens & Hendrickx.

Encountering 15°

Circulus Maximus is an installation in a on the ground floor of the Antwerp museum of contemporary art (M HKA). The intervention consists in inserting a diagonal disc - diagonal in the sense of connecting an upper and lower opposing point in the cylindrical space - providing a new sloping floor, that simultaneously nearly touches the existing floor and ceiling. The disc is covered with a soft beige carpet that matches the current colour of the exhibition space's surfaces. As a materialisation of the largest possible circular surface within the space, Circulus Maximus substantiates a poetic measure of the space. As a sloping floor it invites a visitor to physically engage with the structure. The slope of around 15 degrees – relatively accessible yet unusually steep for an architectural applications – makes the observer conscious of his movements and the impact of the forces can be deduced from the unusual posture of other visitors.

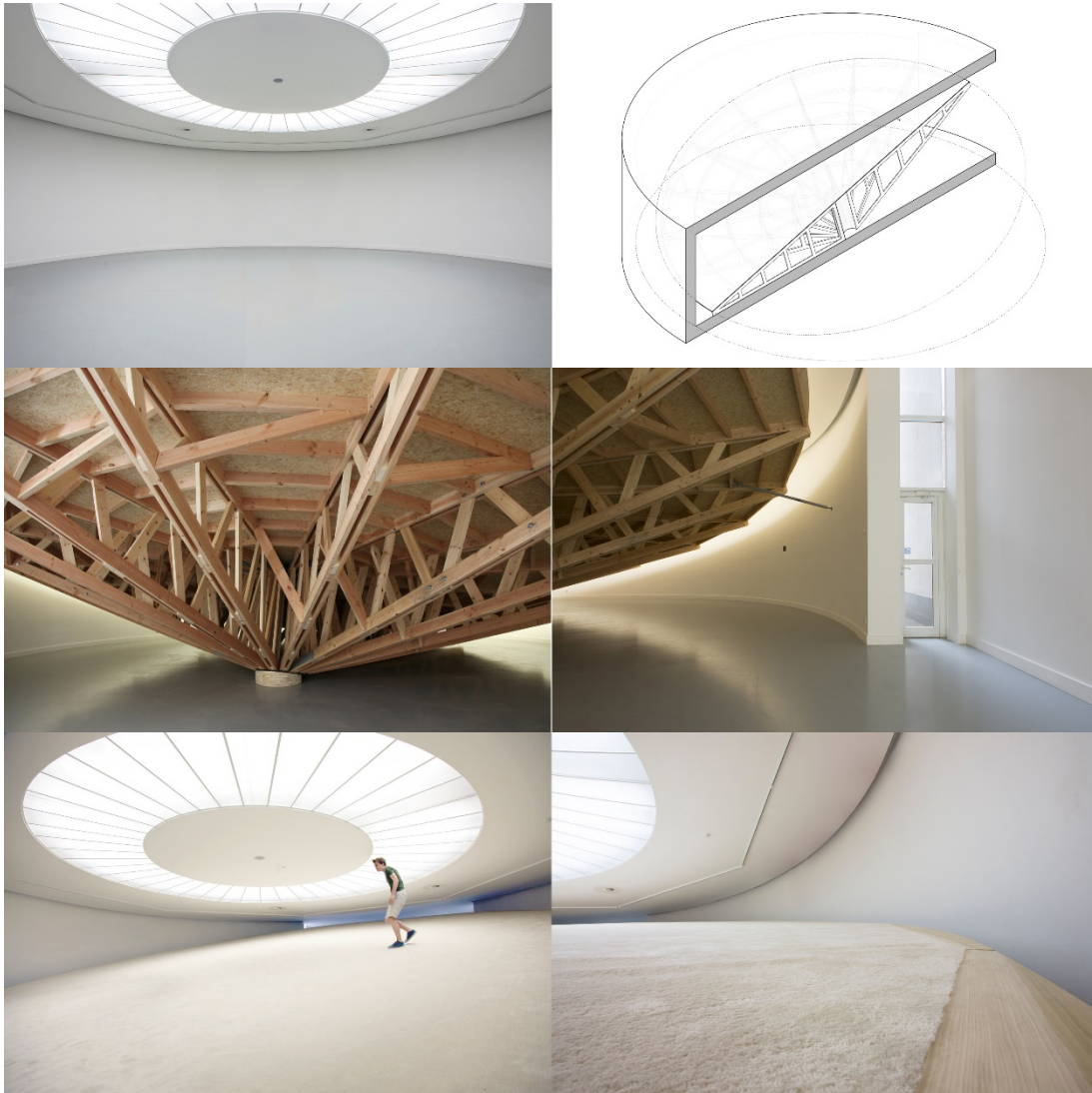


Figure 4 : (top left) the iconic round space of the M HKA in Antwerp (top right) an isometric cross section through Circulus Maximus, four installation views of Circulus Maximus, 2014 by Goossens & Hendrickx.

The anticipation of movement entails a mental simulation based on earlier experiences (e.g. the constructive episodic simulation hypothesis by Schacter & Addis, 2007). By anticipating sound, tactile experiences, movement and perspectives that the spatial configuration affords, the spectator starts exploring it by mentally placing himself in positions that have a specific advantage in relation to other positions, the point where my head would exactly touch the ceiling, the top of true sloped floor, lying flat on the floor facing the ceiling, etc... The disc's materiality (a soft carpet supported by solid trusses), vastness (touching floor, wall and ceiling) and slope (15 degrees) draws the spectator to actually explore the disc: maybe first by touching it, then by setting one foot on it, then the other, finding balance and starting to walk, eventually sitting or lying down on the sloping floor and so on... This way the anticipated movements are challenged by actual movements and his perceptions of the initial

cylindrical space and the disc are recalibrated. By means of his interactions with the structure and the round space, the spectator gradually constructs his own poetic measures of their spatial potential.

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