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Meta(re)presentations

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Abstract

This essay reviews the key literature on the notion of metarepresentations in fields beyond architecture and then attempts a rereading of the conception of representations in the architectural discipline.

Two main categories of metarepresentations in architecture are proposed and depend on their effect on thinking representations; Content and context aware metarepresentations

Content aware metarepresentations are based on a value system and can be divided in two categories. The first one is characterized by standardization and selfreferentiality while the other one is structured as criticism by enabling referencing and quoting within content. Characteristic examples are modern and postmodern architecture.

Context aware metarepresentations resemble the condition of monitoring a system by focusing on the relations between the different parts that temporarily constitute it as such. Characteristic examples are post-cybernetic and post-digital architectures.

Keywords

content awareness; context awareness; representation; metarepresentation; monitoring; control;

I Definitions of meta-representation

The etymology of the prefix “meta” finds its origin in the word μετά which is taken to mean after, beyond) means more comprehensive or transcending. We could argue that a material could be analogue and yet an immaterial representation, in the broader sense, constitute an intentional mental representation of the thing which is a lot different than a random representation of a thing which could be more closely connected to the notion of the trace, a fragment of a whole. According to Barbara Von Eckardt Peirce’s mental representations have four important aspects (Eckardt, 1999); they are realized by a representation bearer, they have a content, its representation relations are “grounded” somehow, and as a result it is interpretable by some interpreter. Therefore, in the case of design a representation demands; A designer, content (literal or fictional, objective or subjective, literal or abstract etc), a discipline or a method, a competent reader / receiver to whom the information is communicated. In this path representation covers the ability to think about something and believe in something and communicate these thoughts to someone else (correctly or incorrectly it does not matter). According to Dennett (Stanovich, 2004) a metarepresentation is a higher – order representation of some kind, or what Sam Scott would define as a representation of a representation (Scott, 2001). It is also implied that the information that is communicated to someone through representation is method-relation sensitive, which means that metarepresentations are enabled by design thinking as a method. Design thinking constitutes a shift of focus from method to changing values (Spiridonidis, 2009), feedback incorporation, experimentation, and engagement through making and fabrication (Voyatzaki, 2010) and thus it negates notions of classical top-down cognitive thinking.

We could decipher two stratas of metarepresentations depending on their performance; Those higher order representations that perform a task of selfreferentially returning the representations action in itself, and those metarepresentations that allow relational thinking on relations that refer to an individual’s mental capacity to reason about the mental states of others and their social role and status, and the condition of the common ground that they share (Horton, 2016).

Returning to Eckardt’s classification we could say that the former kind of metarepresentations emphasizes content, while the latter relations. By repeating intrinsically these actions the way of thinking is affected as the first strata is of a more automatic, fractal looking nature emphasizing encoding and belief in the method, that resembles a couple of early period Magritte paintings with the same title but similar content “the human condition” (figure 1), while the second one assumes a thinking that oversees the object level operations that resemble monitoring, that is evident in the use of Trompe-l’œil in Sala a Crociera, in Palladios Villa Barbaro (c1560). Magritte’s description of one of the paintings is characteristic “In front of a window seen from inside a room, I placed a painting representing exactly that portion of the landscape covered by the painting. Thus, the tree in the picture hid the tree behind it, outside the room. For the spectator, it was both inside the room within the painting and outside in the real landscape (Magritte, 1977).” The ambiguity created through the repetition of the content is enabled by the realistic portrayal of an object that is represented twice in the same medium, the painting. This could be described as contentual self-awareness (Wildgen, 2009). The absence of a frame in the canvas literally (in the context of the painting) merges the landscape with the canvas and the center of the theme, the tree is repeated as an object between different states (painting – painting of a painting) inside a room that is signified by the presence of a window paired by curtains. In Palladio’s Villa Barbaro the emphasis shifts from the repetition of the content to the experience of looking. The use of Trompe-l’œil in Sala a Crociera (figure 2) uses the frame of the windows, the balusters in order

to juxtapose a physical object and a painted one and merge the painted environment with the actual environment of Maser (Treviso). The realism of the frescos painted by Paolo Veronese in 1:1 scale create the illusion of the real window on the wall in a first level reading while in a second level this allows him to insert a mythological narrative in the paintings that creates a second level of thinking of the context, the villa, the owners and the history in which they wish to embed themselves. Contextual self-awareness is the name of the game here; Veronese and Palladio monitor the experience of the sala by opening it to the natural and the mental context by using architecture as a looking device.

Based on the above, in this essay we are suggesting that metarepresentations were not invented in a particular historical period. They are a way of thinking on representations and they are distinguished as either **content-aware metarepresentations**, based on a value system (a way of a higher level thinking on representations), or **context-aware metarepresentations** that resemble the monitoring of a system (thinking on the way we use to represent objects, thinking on how a representational system works). Making these assumptions is very crucial in the meta-understanding of the theories and practices within architecture through the function of representation.

2 Architectural practice and representations

Based on the above, in this essay we are suggesting that metarepresentations were not invented in a particular historical period. They are a way of thinking on representations and they are distinguished as either **content-aware metarepresentations**, based on a value system (a way of a higher level thinking on representations), or **context-aware metarepresentations** that resemble the monitoring of a system (thinking on the way we use to represent objects, thinking on how a representational system works). Making these assumptions is very crucial in the meta-understanding of the theories and practices within architecture through the function of representation.

The issue of representation and its relevance to architecture is crucially affecting architectural practice, especially in the digital and post-digital era when architectural representations as plans, sections, elevations, renderings, walkthroughs etc are not only produced by architects but by other practices too and commonly even by not specialized actors who have access to software that offer similar products. The use of CAD (Building Integrated Modeling especially) by different disciplines is blurring the line of demarcation of the roles of the various actors involved, and is calling for reinstating the social and professional role of the architect with regard to parameters such as originality, authorship and interiority. With a consciously reductionist approach to artistic nature of architecture, for the sake of the argument, architecture is here discussed as a science or rather as a field (Schumacher, 2016) that defines the role of the architect not only as the specialist that generates the preliminary or final drafts towards the built form, but also as the synthesizer and supervisor of inputs offered by various domains. This might be potentially problematic as it seems like an “over-easy mixing of discourses” (Leach, 1997) but it is very common for architects to function both as a filter and as a mirror of society in translating different sources of information into spatial qualities. This is also justified by the inclusiveness and openness, inherent in the timely (Spiridonidis, 2004) education of architects as a way to appreciate other disciplines’ specificities involved in the creation of the built environment. The effective mediating skills acquired, also attribute to architects a social superiority that confirms their role as versatile, hence diachronic as it has been recently reaffirmed in the digital turn. A turn that has radically

**Figure 1.**

René Magritte, The human condition (1933).
Oil on canvas (100cm*81cm)

Source Fig.1: [https://en.wikipedia.org/wiki/The_Human_Condition_\(Magritte\)#/media/File:Ren%C3%A9_Magritte_The_Human_Condition.jpg](https://en.wikipedia.org/wiki/The_Human_Condition_(Magritte)#/media/File:Ren%C3%A9_Magritte_The_Human_Condition.jpg)

**Figure 2.**

Andrea Palladio, Villa Barbaro. (1560).
View of Sala a Crociera with the frescos
by Paolo Veronese and sculptures by
Alessandro Vittoria

Source Fig.2: https://en.wikipedia.org/wiki/Villa_Barbaro

changed the nature of most professions. Since the role of the architect is to appreciate different needs and inputs and transform them into space architectural representations are conceived as a language that codifies space, translates spatially different practices and conceptualizes environments in which these codifications are possible.

3.1 Content awareness_ Standardization_Self-referentiality

Referencing Carpo and Goodman, Buchli notes that the arts hand-made by their authors are called autographic (for example painting) and cannot be replicated, the opposite, allographic, defines those artworks whose identities are irrelevant to notions of originality and duplication (for example music) (Buchli, 2016). Since Alberti's times architectural representations could be understood as a codification that affected both the design object and the designers' professional role in the social structures. The expertise in design mediation gradually set the foundations of the architectural profession, defined the domain and enabled architectural authority while at the same time imposed an architecture related aesthetic paradigm that was based in the method of architectural production implied in *De re Aedificatoria* (Alberti, 1991); design precedes construction, architecture is comprised by different parts that are related to each other according to *firmitas – utilitas – venustas*, that in their turn are defined by proportion, the rules of the orders, materiality, site and position and contouring. The standardization (Carpo, 2011) implied in technical representations and the notion of the identical constitutes a form of language that allows communication between different parties be it the relation between architect – object (construction and materiality) or the relation between object – appreciator of architecture (*coincinitas*) (Tavernor, 1985).

1. Writing, drafting, drawing, designing are terms that share a strong connection in our case.

Architects after Alberti's premises ¹, by default, function on a meta-Albertian level which is a paradox as it assumes that in order to have a discipline someone functions on a meta- level although this level falls in the self-referential, content aware paradigm (architecture as a sub-group of Albertian practice). As architectural representations synthesize conclusions taken from various contributions that are then standardized by means of plans, elevations, sections and construction details that allow buildings or objects to be constructed in the absence of the architect, architectural representation is considered to be a non-representational art-form for a number of philosophers. Namely, Scruton, Langer and even Goodman suggest that architectural representation does not represent any content (Scruton, 1979) but represents the processes necessary for its materialization as is depicted through the repetition of symbols. This approach of course excludes the condition of architectural interiority, the way that architectural concepts and ideas are discussed and

formulated within the discipline and as a result they carry content that is architecturally and even aesthetically codified, communicated and similarly appreciated. In advance literature underlines that even technical representations are also guided by aesthetic values, even if they are conceived as purely procedural manifestations ². This is easily understood in parallel to typography, graphic design or mapmaking and how these practices carry cultural content that goes beyond the information they communicate. This aesthetic parameter though is a first order representation that is based on the belief that there is some kind of an inherent truth in the code that architects use in order to communicate. The only way to test their meta – meaning would be to investigate whether codes are prolific in advancing cognition in architectural thinking, and not just symbols that follow a stylistic manner. This is related to architectural interiority and has historically been documented as a repetition happening in abstract-space through elements of what constitutes a disciplinarian architectural language.

One example is the codification in Le Corbusier's "Five points" (Le Corbusier, 2007) (figure 3) of architecture; pilotis, the call for an absence of supporting walls in favour of a free-designing ground plan, the free design of the façade, horizontal windows and roof gardens adopt a typological vocabulary that references the advances in building construction, the autonomy of the façade from the structure, and essences of standardization that follow the first industrial revolution that at the same time conceal aesthetic aspects linked to machine age, modern painting, abstraction and the early 20th century avant – garde. Another example is the series of diagrams of interiority that Eisenman produced in the 1980s and the beginning of the 90s in which a cube is deconstructed following discreet steps and specific rules. Geometry as abstraction functions as a metarepresentation of the modern architectural production as it is used as a cognitive tool that measures relations between parts and justifies their necessity and role in a synthesis. Even in Eisenman's procedural experiments functionality is embedded in the somehow automatic, cause and effect logic that we believe that is hidden in the mathematic foundation of geometry. And although diagrams serve as criticism they do not depart from the meta-level of gaining coherence by referencing symbols. Belief is the basis of this contentual system and the seemingly infinite possibilities are embedded in the same eidetic path, the one of the rule, the canon that directs sameness and difference. By residing in abstract space in opposition to a qualitative environment, modernism inserts the necessary distance between the architect and the actual built environment. Architecture controls the material object as a representation of an object conceived in vitro, in the design praxis milieu almost symbolically. Architecture is mediated as an exteriority while any construction is nothing more but an image of the model. Alberti's notion of the "lineament", Le Corbusier's declaration that "architecture is the product of the mind" and Vitruvius's distinc-

2. "Within the spatial practice of modern society, the architect ensconces himself in his own space. He has a representation of this space, one which is bound to graphic elements [...] this conceived space is thought by those who make it to be true. Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith, (Oxford: Basil Blackwell Publishing, 1991), p. 361.

tion between mind and matter (Hendrix, 2011) all point to the same direction. Representational distance allows the dominion of symbols that establish the authority of the architect while ensuring his control over what we call architectural space. Distance also effects on the temporalities of contentual metarepresentations as time seems to be obsolete since it is an intrinsic characteristic of the system that is reversible. Time is of a symbolic nature, to repeat time has absolutely no meaning as ideas are eternal or perpetuated.

3.2 Content awareness. Referencing – quoting. Criticism.

An action of metarepresentation that falls in the content awareness trope but what does not just fit in the previous paradigm is the action of referencing and quoting. This practice reached a peak with post-modernism and especially that branch that used historical references, figurative work in the architectural work. At that time Post-Modernist architects stood for differentiation, variation and choice (Carpo, 2013). Through the action of reappropriation or most famously deconstruction of forms that were taken from the span of architectural history they introduced a meta-thinking of the content and the techniques used in architecture but in a, more or less, strictly historical western metaphysical framework. According to Sanford Kwinter what we understand historically and geographically as Western metaphysics is rooted in the relation of subject-object in which the dipoles of representation-reality and criticism-representation are interjected, and through which any relationship between separate things can be understood (Kwinter, 2001). On the two dipoles of representation-reality and criticism-representation the relation of possible-real emerges internally. Thereby, representation constitutes a possibility of the real while criticism constitutes a possibility of representation that is not realized in the first place. Criticism of representation emerges as a form of metathinking on representation as by referencing juxtaposes what is realized with its possibility, what could have been thought and by this it criticizes ethics of originality and authorship.

A good example is the various references to architectural elements in James Stirling's Neue Staatsgalerie in Stuttgart (figure 4). James Stirling neither attempts to change the technology of architectural building nor he proposes a new dogmatic architectural vocabulary, but instead reconfigures the museum almost as a built index that opens up the building to interpretations. Michael Graves' Portland Building instead of elements indexes styles that then he merges. This combinatory practice again tests the limits of the possibilities inherent to criticism and content in architecture.

4 Context awareness. Monitoring

If contentual metarepresentations automate distance through repetition, contextual metarepresentations emphasize presence by monitoring the relations within the system. This constitutes a rethinking of architectural production within the tropes of exteriority that could mean an opening up of the inherent relations according to which architecture is produced.

A metarepresentation of context awareness demands a rethinking of the framework in which architecture is produced. This will demand a rethinking on key notions such as standardization, self-referentiality, abstraction, authorship, criticism, distance and the primacy of fixed content. In this sense a meta-architectural expression does not constitute a paradigm shift but a self-aware re-evaluation of the relations according to which architecture is in-formed by its representations.

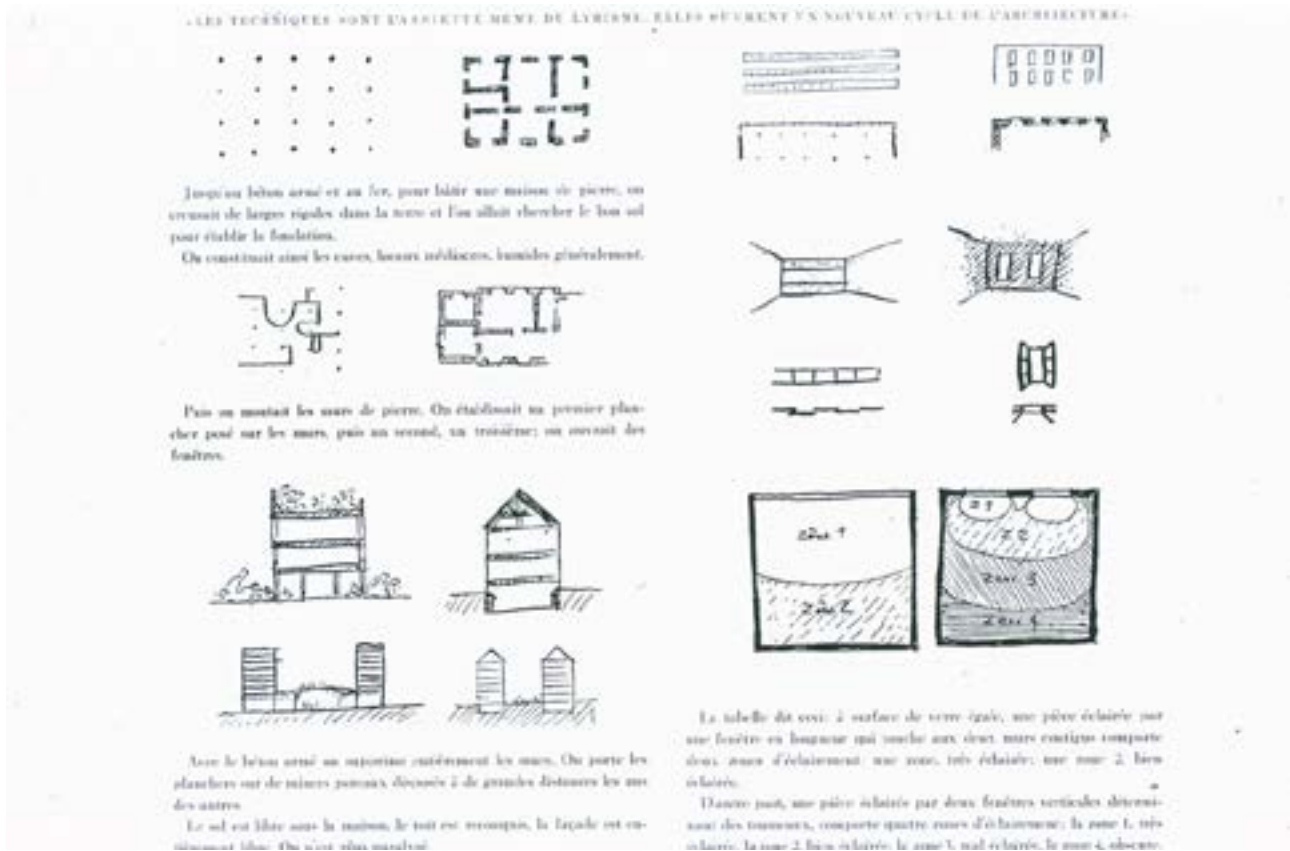


Figure 3.

An illustration of the "five points" of architecture by Le Corbusier

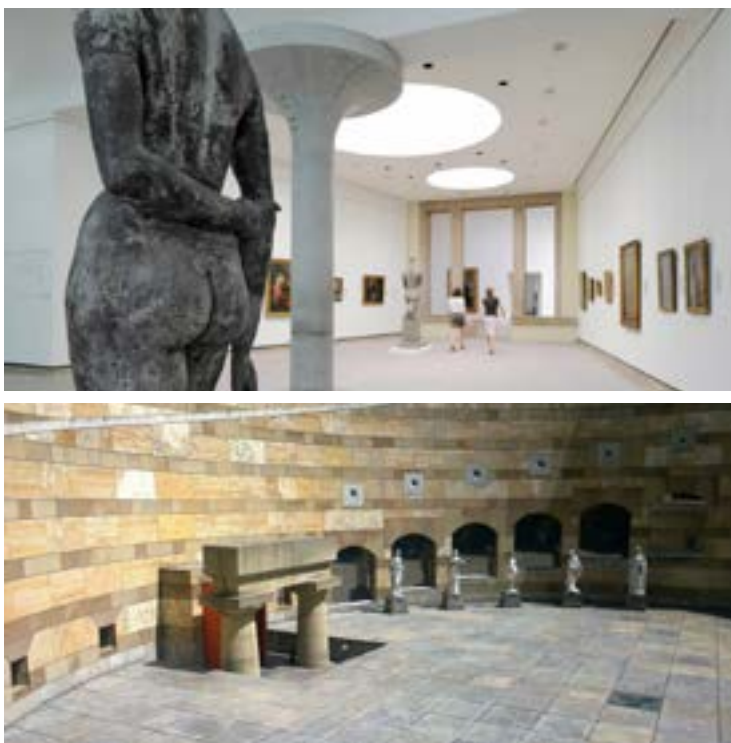
Source Fig.3 https://twitter.com/France_UNESCO/status/750638087022211072/photo/1

Figure 4.

James Stirling, Neue Staatsgalerie, Stuttgart.

Source Fig.4 https://en.wikipedia.org/wiki/Neue_Staatsgalerie

The beginning of this kind of thinking in architecture can be traced in the aftermath of WWII as the events that took place did not tolerate the modernist vision of formal abstraction as architecture along with the arts and the sciences had to take a stance against the historical events. It was part of this turn that architecture started to examine ideas of context and how to relate to specific situations. In other words, architectural thinking started to look for a common ground, a body of information to share with other discourses and practices. This immediately meant an opening of the architectural language in order to communicate in a way that it is understood outside it and a turn towards what we could call an exteriority. This exteriority was neither then nor now something specific, but it changed following the trends that gained importance from time to time; social and cultural studies, philosophy, anthropology, cybernetics, biology, systems and complexity theories... the list is vast. The important issue is the demand for hetero-referentiality that signified a rethinking (if not loss) of absolute authority in the finished object. Architectural representations were rethought in this prospect and, therefore, re-appreciated. The notion of collage was an early reflex as it graphically contested purism, the psychogeographic maps of the Situationists inserted randomness in the conception of cities along with subjective issues. Archigram and archizoom introduced a re-thinking of the medium of standardized representation by opening up to mediums as the pamphlet, the magazine or the video. These experiments remain symbolic in nature while the very first breakthrough towards a rethinking of the relations in which architecture contributes came with cybernetics and the realization that architecture should be able to be in-formed and not simulate a detached environment but "rather the organism itself and its psychological, historical, and sensorimotor experience within that environment" (Roche, 2014). By embedding real time changing information architecture is embedded into context ecologies.

This constitutes a meta-presence as a return or exaggeration of presence that was further enabled with the advent of the digital revolution 3. that in architecture is realized through Building Information Modeling and File to Factory protocols to name a few. BIM enables real time monitoring of different aspects and infrastructures of a building while f2f protocols enable negotiation between design and product, engagement and a continuum (Voyatzaki, 2010) between the design process and construction. Architecture can become specific, customized and contextually aware if architecture manages to monitor information and channel it in directions that contest its sense of object. The metarepresentational scheme that architecture falls in is that of a mind monitoring an informational network where cognition is always situated in a specific environment that is both technical and subjective (Roche, 2014) where space is a trope of information. Contextual aware metarepresentations do not represent

3. As Mario Carpo writes "Systems theory, complexity science and the so-called theory of self-organising systems were part of the legacy that early cybernetics had bequeathed to contemporary digital design". Mario Carpo, Introduction in Mario Carpo (editor) *The Digital Turn in Architecture*. 1992-2012. ISBN 978-1-119-95174-2. Wiley 2013

information, the metadata ⁴ that follow meta-objects are characteristics of the objects and in-form them while at the same time can change and effect on the object. Here the subject object relationship is one of sympathy where they both cross-infect one another.

⁴ Metadata is content about content. Information about the author of the data, time and space when it was produced

This of course affects the focus in conceptualizing such kinds of architectures. Robotics and self-configuring electronic environments – enabled by compatible devices that take advantage of the internet of things start to become the norm while they also affect the agencies within an ecology and the contribution in the creative act that is now not only made by human but also nonhuman agents. Non-human agents become less predicatable, more adaptable, and interactive, less automatic, as Artificial Intelligence and Machine Learning introduce behavioural traits that incorporate feedback and correct or even better moderate (Hayles, 1999) their performance. As human and non-human agents are inscribed in the ecology of interactions cultural constructs are created that go beyond typical taxonomies of interiority and exteriority, content and context and thus architecture in a metarepresentational level is realized almost at the moment of its conception, in real time.

Lars Spuybroek's d-tower was one of the first examples of an architecture that had an interactive internet-based component (Spuybroek, 2004) that controlled the appearance of the object by changing its color according to a questionnaire that engaged the citizens of Doetinchem. Harvesting interactivity becomes a matter of conciseness and compatibility of networks with the design thinking / programming of architecture. The ideology behind smart cities is the same. Metarepresenting interactions comes with the promise of an umbrella software / environment that will be able harvest behaviors and feedback from all dimensions of ecos. The definition and interconnection of all parameters at once will allow monitoring of the ecologies. This pragmatic approach, that seems to push aside all ideological aspects of the city by harvesting all kinds of available metadata is evident in projects like Chicago: City of Big Data. The city is analyzed as multiple layers of infrastructure; the narrative of unhindered flow describes the relation of data to the city. High-tech infrastructure as wireless networks has to comply with the low-tech infrastructures of the sewers and the roads ⁵.

⁵. See also <http://www.architecture.org/exhibits/exhibit/chicago-city-of-big-data/>

5 Metapresence

Throughout architectural history and theories the control of the architectural object demanded a conceptual distance, a vantage point for the architect in order to overview the design object. This condition affects even the meta-thinking of architecture as it compels it to retreat in contentual awareness confines that are generally identified by criticism, historical or theoretical referencing and quoting and

**Figure 5.**

NOX's D-tower emitting different colors depending on the different moods of the citizens.

Source Fig.5 <http://tropolism.com/2006/02/nox-loves-you.html>

**Figure 6.**

Chicago City of Big Data by Percipient / Digital labs

Source Fig.6 <https://percipientdigitallabs.com/work/caf>

selfreferentiality. This as a result sustains the distance between architectural discipline and the ever-changing social ecologies. Architecture becomes a style and thus the architect is self-identified as solely the custodian of a historical heritage, architecture conforms to the past as this is where it abstracts validation.

In the latter decades though the change in the sociocultural environment with the advent of the flow of capital and knowledge redefined our conception of boundaries, cities, countries beyond spatiality, language and even behavioral codes and ethics. The rapid expansion of the internet and the increase in the use of portable technologies is accompanied with the emergence of new media and the rapid increase in the production of knowledge. A new metarepresentation of architecture started to emerge that experiments with monitoring the relations within the system that it is connected. This metarepresentation is defined by contextual awareness and is practiced with an emphasis in the presence of design-thinking. This inscription in the field of ecologies that architecture is a part of constitutes an emerging meta-presence for both representations and practices of the discipline that put into doubt architecture's self-referentiality and historical and theoretical constitution as an object.

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