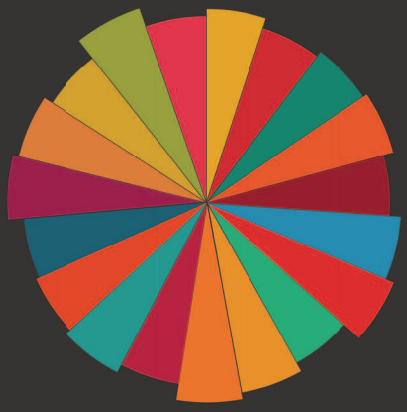
Words of Architectural Theory

Volume 2



Fall 2019 / Winter 2020

Words of Architectural Theory

Volume II

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ARCH 5006EL / Architectural Theory Seminar

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LaurentianUniversity
UniversitéLaurentienne

McEWEN SCHOOL OF ARCHITECTURE
ÉCOLE D'ARCHITECTURE

Words of Architectural Theory Volume II

ARCH 5006 EL
Architectural Theory Seminar
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Introduction

Izabel Amaral

Students from the course Architectural Theory Seminar in a Sharing circle with knowledge keeper Will Morin, September 2019. Photography by Izabel Amaral.

Live and moving words

Started with the McEwen School of Architecture Charter class in 2018, this project proposed the study of architectural theory through a compilation of essays on specific terms that have developed significant importance to the discipline of architecture throughout past or recent history. Not only a methodological route that facilitates the understanding of a complex subject by a subdivision into smaller navigable units, the study of words has the objective of unveiling historical trajectories, cultural influences and a collection of meanings that will contribute to each students' reflective practice in the future.

For this second volume of Words of Architecture Theory, we continued to investigate architecture as a form of cultural practice that overlays multiple ways of knowing. During fall 2019, the course "Architectural Theory Seminar" orchestrated a careful confrontation of ideas, through presentations and the readings of key texts in architectural theory. We have welcomed a few scholars to this class that have presented their research on philosophy, theory of architecture or indigenous ways of knowing. We are very grateful to professors Jean-Pierre Chupin, Carmela Cucuzzella, David Fortin and François Côté-Vaillancourt for enriching some of our Wednesday afternoons with thoughtful content and discussion. Knowledge keeper Will Morin brought to our class a deep questioning of our place in the world. The photograph to the right depicts an activity of weaving a giant Dream Catcher with the group, during which Will asked about the essence of his lessons of respect and life from Anishinabek culture. During this activity, we proclaimed words about our mission in the world, forcing each and every one to deeply connect architecture to its fundamental mission of caring and creating places for life. As words carry ideas of life and movement in the Anishinabek language, Will brought a powerful image to interpret this project, as students contemplated in their essays the phenomenon of words being alive and moving through time, cultures and disciplines.

The compilation of nineteen essays on the following pages covers a range of meanings and approaches to the study of architectural theory. Each essay comes with synthetic definitions, translations to French and Ojibway, as well as with illustrations that complement the reading and show our discipline's strong connection to the realm of images.

Five essays unveil relations of architecture to other artistic disciplines, as we can read in the texts about the notions of Expression, Geometry, Ornament, Pattern and Proportion. Four essays bring forth arguments about the relation of architecture to natural or human sciences, as shown on the entries about Complexity, Semiotics, Sustainability and Technology. The essays on the notions of Historicism, Postmodernism and Spatial Politics investigate the influence of socio-historical conditions, political and artistic movements to architectural theory, while the essays on Embodiment and Movement dig into tangible aspects of conditions that generate our perception and self-construction of the built environment. Finally, five essays investigate the importance of abstract thinking to architectural theory, exemplified in the entries on Innovation, Memory, Place, Uncanny, and Utopia.

King Abdullah Petroleum Studies and Research Centre, Zaha Hadid Architects, 2017
Boromini, Commissioned 1634

"When circumstances defy order, order should bend or break: anomalies and uncertainties give validity to architecture." [1]
-Robert Venturi

Complexity

by : Alex Klein Gunnewiek and Henry Dyck

Complexity *(n) / (adj)*

/kəmˈpleksədē/

Complexity in context of the larger theoretical framework of architecture, is the interaction between two or more elements or systems whose whole is greater than the sum of their individual parts; these are the interaction's emergent properties [Gestalt]. For complexity theory the scale of the emergent properties is directly proportionate to the concurrence of the elements or systems in a given interaction.

French:
Complexité

Dutch:
Ingewikkeldheid,
Samengesteldheid
or, complexiteit

Theorists
Robert Venturi
Vittorio Gregotti
Charles Jencks

From its etymological roots complexity takes the many as a perspective of seeing them as a whole. Derived from the Latin word *complicationem* complexity combines the parts *com* – with/together, and *plicare* – to fold/weave- which form the primary understanding of the word.[2] Complexity and our ability to synthesize an understanding of it, is evident in our ability to place ourselves within the interactions of the world.[3] Due to its self-evidency, complexity and the synthesis of its ideas are prevalent in nearly every field of study, which follow a common methodology for reconciling a conception of complexity.

A primary understanding of the evolution of the theory of complexity comes from the scientific field, which originates from the Newtonian worldview of reductionist thought. In this worldview the world is perceived as a series of interactions which can then be broken down into individual components.[4] In this worldview complexity is viewed as the parts of the world that have not yet been rationalized or broken down enough into their fundamental components to have a 'full understanding' of the properties of the interactions.[5] Newtonian Science seeks to provide an objective understanding of individual things / patterns within the world, but it does not seek to understand the properties of systems of interactions.

1. Robert Venturi, Complexity and Contradiction in Architecture (New York: The Museum of Modern Art, 1977). P. 41
2. "Complexity | Search Online Etymology Dictionary." Accessed September 15, 2019. https://www.etymonline.com/search?q=complexity+.
3. Gregotti, Vittorio. "Lecture at the New York Architectural League." Section A vol. I, no. 1 (Montreal: February/March 1983.)
4. Andrew Janiak, "Newton's Philosophy," Stanford Encyclopedia of Philosophy (Stanford University, May 6, 2014), https://plato.stanford.edu/entries/newton-philosophy/.
5. Francis Heylighen, et al. " Complexity and Philosophy," in Complexity, Science and Society, (CRC Press, 2007), p. 120

San Carlo alle Quattro Fontane, Boromini, Commissioned 1634

Figure 2
School of Fish; demonstrates the pattern of emergent properties rising out from the patterns of the individual fish swimming.

The worldview of Holism & Emergence (or General Systems Theory) seeks to address the inadequacies resulting from a reductionist worldview held by the Newtonian perspective. This world view is built fundamentally off of the idea that the whole of a system of interactions is greater than the sum of their parts.[6] This worldview extends the Newtonian Theory by looking not just of the constituent parts of a system but also looking at the sum of the whole. However, due to the numerous interactions in a given system the whole and the parts are studied separately; macro & micro scales.[7] In these fields of study it is generally accepted that the micro is the study of the individual agents and the macro studies the emergent characteristics of the interactions of the individuals. However, the sum of the individual agents does not equal the product of the macro; General Systems Theory does not seek to explain this difference.

Complexity Science attempts to explain these differentiating products of the micro and macro scales (or Complexity Theory). This systems approach relies on a few fundamental principles; nonlinear systems (systems where the input and output are not directly proportional) and statistical mechanics (microscopic processes occurring statistically are directly linked to macroscopic observation);[9] computational modeling of complex interactions; and biological evolution (blind variation and natural selection).[10] These systems are fairly robust in developing an understanding of the operation in the world, however, our ability to implement Complexity Theory in disciplines outside of the scientific field has been overshadowed by the small subset of *Chaos Theory.*[11] (Chaos Theory only deals with systems that are highly sensitive to initial conditions and diverge widely from each other, making long-term predictions next to impossible.)[12] Complexity Theory and its rise to prominence in the 20th century parallels with the rise of designers implementing a more complex and comprehensive understanding of interactions within the architectural environment.

The scientific transition of Newtonian Reductionism to General Theory of Complexity mirrors the transition in architecture from Modernism to Post-Modernism. Today complexity has evolved beyond the Post-modern ideas of aesthetic composition as theorized by Venturi to the emergence of form finding and computation in generative architecture.

6. Less is more, more is different: complexity, morphology, cities, and emergence p. 167
7. Francis Heylighen, et al. Complexity and Philosophy. p. 124
8. Larry Hardesty, "Explained: Linear and Nonlinear Systems," MIT News (Massachusetts Institute of Technology, February 26, 2010), https://news.mit.edu/2010/explained-linear-0226
9. J. Willard Gibbs, Elementary Principles in Statistical Mechanics (New York: Charles Scribner's Sons, 1902). P.6
10. Francis Heylighen, et al. Complexity and Philosophy. p. 127
11. Ibid. p. 131
12. The Editors of Encyclopaedia Britannica, "Chaos Theory," Encyclopædia Britannica (Encyclopædia Britannica, inc.), accessed September 22, 2019, https://www.britannica.com/science/chaos-theory.

Venturi's Complexity and Contradiction posited the argument that reductionism in architectural composition creates boring architecture; articulating this position in the famous line "less is a bore," in response to Mies' "less is more."[13] Venturi's assessment of architecture and his argument for more, (or as he calls it "both and,") is an aesthetic one, which focusses on the relationship between a person's perception of the architectural composition.[14] Venturi's larger argument is effectively summed up in his writing of the progression of the Doric temple: "The Doric temple's simplicity to the eye is achieved through the famous subtleties and precision of its distorted geometry and the contradictions and tensions inherent in its order. The Doric temple could achieve apparent simplicity through real complexity. As complexity disappeared as in the late temples, blandness replaced simplicity."[15] Complexity to Venturi is achieved through contradiction and ambiguity and thus even an apparent simple design creates interest. Borromini's dome in San Carlo alle Quatro Fontane, achieves complexity visually through the pendentive suggests that it is both wall and ceiling and thus appears as if "the dome is generated from an undulating wall".[16] Venturi's analysis of architecture is based on composition, but others working in resistance to Modernism's reductionist tendencies critique complexity in a systemic rather than an aesthetic way.[17]

Charles Jencks, in his book *Architecture of the Jumping Universe* writes about Jane Jacobs' work in resistance to the modernist concept of the city, developed by Le Corbusier and implemented by Robert Moses.[18] Corbusier's idea of the city was fundamentally mechanistic, breaking it down into "five functions."[19] Resisting this idea, Jacobs makes distinctions that are canonic in scientific Complexity Theory. She insists, "a city is 'a problem of organized complexity'- the organization of many different functions, some small, some large- like those with which the life sciences deal. And this is her point: a city is fundamentally a living organism with complex interlinkages and holistic behaviour."[20] Here we see Complexity Theory's propositions with respect to systemic thinking intersect with spatial design.

Complexity Theory in architecture can be seen in principals of self-organization, emergence and autopoiesis found in Complexity Theory with computation to develop a generative design process.[21] In generative design (like in natural patterns) whether those be schools of fish of termite mounds, they are all produced by "...a coherent form or array, without any leader or central directing intelligence..." [22] They are a system of individual agents working in an organized manner in relation to each other. [23]

"...a city is 'a problem of organized complexity' - the organization of many different functions, some small, some large - like those with which the life sciences deal."

The self-organizing system can be found in generative design where computational algorithms optimize design solutions through a feedback loop of inputs and adjustments towards a desired result. Weinstock, in an article in Architectural Digest writes that the future city will be the "self aware city" where cities become "superorganisms" aware and responsive to the "fluctuating discharge" of the city's occupants, responding to them based on information gathered from a "sophisticated sensor system" and "homeostatic controls".[24] In architecture like in Complexity Theory; it is the organization of complexity that makes it effective for use by designers.

Cover Image
AVC, Studio. "King Abdullah Petroleum Studies and Research Centre." Studio AVC (blog). Accessed September 21, 2019. https://www.studioavc.com/portfolio-items/king-abdullah-petroleum-studies-and-research-centre-2/.

Figure 1
"San Carlo Alle Quattro Fontane: Madness or Masterpiece?" ArchDaily, March 6, 2017. http://www.archdaily.com/806683/san-carlo-alle-quattro-fontane-madness-or-masterpiece.

Figure 2
"27 Incredible Underwater Pictures of Schooling Fish." Accessed September 22, 2019. https://allthatsinteresting.com/schooling-fish.

13. Robert Venturi. Complexity and Contradiction in Architecture. p. 17.
14. Charles Jencks. Architecture of the Jumping Universe. (Singapore: Academy Editions, 1997), p. 26.
15. Robert Venturi. Complexity and Contradiction in Architecture. p. 17.
16. Ibid. p. 26.
17. Charles Jencks. Architecture of the Jumping Universe. p. 26.
18. Ibid. p. 26.
19. Ibid. p. 26.
20. Ibid. p. 26.
21. Christina Cogdell. Towards a Living Architecture: Complexism and Biology in Generative Design. (Minneapolis: University of Minnesota Press, 2018), p. 5.
22. Ibid. p. 36.
23. ibid p. 36
24. Ibid. p. 42.

Peter Zumthor's Bruder Klaus Field Chapel

"...embodied space integrates body/space/culture and connects microanalyses of individual bodies and place-making to macroanalyses of social, economic and political forces."[1]

Embodiment

by : Jessica Haire

Embodiment *(n)*

/əmˈbädēmənt/

The median through which our physcial bodies and experiential world connect in spatial form.

French:
concrétisation

Ojibwe
Aadizookaan or Asdisookaan
(translates to spirit)

Theorists
Maurice Merleau-Ponty
Terrence Turner
Mariella Pandolfi
Harry Francis Mallgrave

Embodiment is referred to as an expression of a feeling, idea or quality in a form that is tangible or visible.[2] In some instances, it can also be related to terms such as personification, manifestation or representation. In the field of architecture and design, embodiment relates to ways of communication in its ability to translate the idea of the architect into a built form. However, in addition to conveying ideas and feelings, embodiment is also closely related to the human body, the ways in which our bodies experience the world and the ways in which the world influences our bodies.[3] In Spatializing Culture: the ethnography of space an place (*Embodied Space*), she explains that, "embodied space integrates body/space/culture and connects microanalyses of individual bodies and place-making to macroanalyses of social, economic and political forces."[4] This suggests that each individual is capable of developing their own perceptions of an environment based on their preconceived experiences and understandings. On the other hand, as Low remarks, an environment is able to influence the behaviour and actions of individuals, intentionally or unintentionally, based on factors that create a specific experience. In this sense, it can be interpreted that embodiment and embodied space is contained in all architecture through the production of a spatial experience.

While the body is host to the physical biological, emotional, cognitive and social characteristics, embodiment is defined as the "intermediate

1. Low, Setha, "Embodied Space," in Spatializing Culture: The ethnography of space and place, Routledge (London, 2017), 94
2. "Embodiment," Cambridge Dictionary, accessed September 15, 2019, https://dictionary.cambridge.org/dictionary/english/embodiment
3. Low, Setha, "Embodied Space," in Spatializing Culture: The ethnography of space and place, 94
4. Low, Setha, The anthropology of space and place: locating culture, Blackwell (Oxford, 2012)

Figure 1 "An Occupation of Loss" art installation by Taryn Simon as an embodiment of grief.

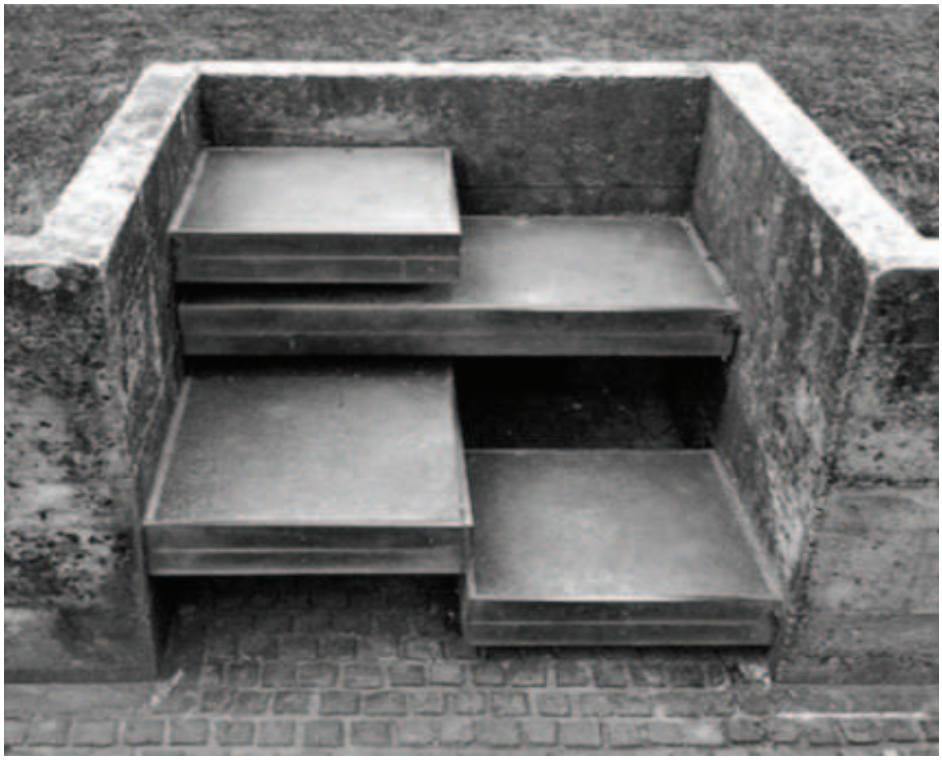


Figure 2
Stairs at the Brion Cemetery in San Vito d'Altivole, Italy by Carlo Scarpa

Architectural spaces can act directly on attention and conscious awareness through body schema by disrupting the habitual engagement with space.

methodological field defined by experience and mode of presence and engagement in the world".[5] Therefore, embodiment can be understood as "the median point of connection between the biological body and the experiential world" since embodied space is a location where human experience and consciousness take on a material and spatial form.[6]

Since the 1960's, various individuals in the fields of ethnography, philosophy, anthropology as well as the physical and social sciences have developed a number of theories in an attempt to understand the complex relationship between the human body and embodied space. Anthropologist Terrence Turner explains that, even though the body is an individual organism, it is dependent on the existence of other individuals and the environment.[7] Through this he suggests that, even in the physical independence of the human body, we are dependent on other social beings and areas to explain that we become an embodiment of our experiences and those around us. On the other hand, anthropologist Mariella Pandolfi explains that embodiment also relates to identity as "defined by historical social structures that inscribe the body and naturalize a person's existence in the world".[8] This can be interpreted to mean that humans are an embodiment of historical experiences and that our experiences within a particular environment have minimal influence. Furthermore, David Harvey argues that the "body is open to the world such that culture, discourses and representation are not separate but part of its materialization".[9] Through this statement, he claims that who we are is completely determined by our experience and that the human body is a measure of the material and social world in which we inhabit.[10]

5. Csordas, Thomas, "Embodiment and cultural phenomenology" in Perspectives on Embodiment: The Intersections of Narure and Culture, (1999), 12
6. Low, Setha, "Embodied Space," (2017), 95
7. Turner, Terence, "Social Body and Embodied Subject," in Cultural Anthropology, Vo. 10 No. 2 (1995)
8. As quoted in Low, Setha, "Embodied Space," (2017), 97
9. Harvey, David, "The body as an accumulation strategy", Environment and Planning D: Society and Space, Volume 16, 1998, 420
10. Ibid.

It is evident that within the study of embodiment and embodied spaces there are various ideas on the significance of the body as a tool for understanding space and place. There is even more discussion on the subject in terms of how our bodies are understood differently depending on the local knowledge, social relations and culture with which we are familiar.[11]

More closely related to architecture, the work of French philosopher Merleau-Ponty offers insight as to how architects might understand the ways in which people experience designed spaces. He discusses the importance of visual and tactile senses and believes that the way in which an individual constructs their own sense of three-dimensional space is created through a connection of vision and proprioception that develops as our bodies move around the world.[12] In addition to this relationship between vision and action, Merleau-Ponty also explores the role of bodily exploration and suggests that "we are drawn into bodily engagement as we seek resolution of perceptual uncertainties.[13] In other words, the human body is drawn to understanding space, particularly spaces that seem to call out for bodily movement, which encourages architecture to explore new strategies for spatial organization. For example, the work of German architect Hans Scharoun invites exploration through dynamic spaces and angular geometries.[14] This is also evident in Peter Zumthor's Bruder Klaus Field Chapel which focuses on the interaction between the human body and the built environment controlled through body schema.[15] Architect Steven Holl was also highly influenced by this idea claiming that, "the movement of the body…within space is the elemental connection between ourselves and architecture…our faculty of judgement is incomplete without this experience."[16] Our knowledge of the world is grounded in our ability to engage in it which means we read the world in bodily terms.[17] Merleau-Ponty argues that the idea of consciousness begins with embodiment and that our bodies become the framework for all perception.[18]

Embodiment is a critical consideration in the field of architecture and design. There is an obvious relationship between the mind, body and the built environment and the way in which each element influences our connection to space. Embodiment is a critical tool and thought process used by the architect to create architecture that communicates an idea or emotion to users in physical or spatial form. This thought process positively contributes to the built environment through thoughtful architecture that serves a greater purpose.

"The movement of the body…within space is the elemental connection between ourselves and architecture… our faculty of Judgement is incomplete without this experience"[19]

The idea of embodiment is arguably what allows the practice of architecture to be considered a form of art; just like paint or sculpture, the architect uses form, material, light, shadow and structure as a representation of a thought. In essence, it is this concept of embodiment that is responsible for our individual understanding of our own bodies as well as the spaces in which we inhabit. Embodied space and intentionality of individual paths through life open space to various social and political imaginings.[20] It offers a grounding for theoretical considerations for locating space within bodies – individual, collective, human and non-human – in such a way that body knowledge and cognition is equally important to comprehending space and place.[21]

Cover Image
Zumthor, Peter. "Bruder Klaus Field Chapel." n.d. Photograph. Accessed from The Nordic House: Alvar Aalto (1999), pg 21.

Figure 1
Simon, Taryn. "An Occupation of Grief." Photograph by Naho Kubota in Park Avenue Armory (2016)

Figure 2
Scarpa, Carlo. "Brion Cemetery stairs." 1968. photograph.

11. Low, Setha, "Embodied Space," (2017), 96
12. Hale, Jonathan, Merleau-Ponty for Architects, Routledge, New York, 2017, p.40
13. Ibid. 47
14. Ibid. 48
15. Jelic, Andrea et al., "The Enactive Approach to Architectural Experience: A Neurophysical Perspective on Embodiment, Motivation, and Affordances," in *Hypothesis and Theory*, March, 2016.
16. Holl, Steven, "Parallax," Princeton Architectural Press, New York, 2000, 26
17. Hale, Jonathan, "Merleau-Ponty for Architects, Routledge, New York, 2017, 49
18. Ibid.
19. Holl, Steven, "Parallax," 2000, 26
20. Low, Setha, "Embodied Space," (2017), 118
21. Ibid.

Fallingwater, Frank Lloyd Wright, 1964.

"Intuitive activity possesses intuitions to the extent that it expresses them.— Should this expression seem at first paradoxical, that is chiefly because, as a general rule, a too restricted meaning is given to the word "expression." It is generally thought of as restricted to verbal expression. But there exist also non–verbal expressions, such as those of line, colour, and sound; to all of these must be extended our affirmation."[1]

Expression

by : April Machum & Emilie Valiquette

Expression *(n)*

/ɛkˈspɾɛʃən/

The act of representing the atmosphere or character of space through techniques which display the composition of concepts and experiences of the creator. The expression of the work may be perceived differently to each individual.

French:
Expression

Ojibwe
Waabanda'

Latin
expressiōn-em

Theorists
Ludwig Wittgenstein
Benedetto Croce
R.G.Collingwood
Roger Scruton
Peter Kivy
Stephen Davies

Whether used in the context of art or architecture, the term expression has come to have various meanings. But how are the qualities of expression perceived in each of these contexts and who determines how expression is displayed or presented? The term expression has commonly been used to describe artwork and discuss feelings related to the reception and the production of a work of art. As the term evolved, how has expression come to describe other forms of art, specifically in terms of architecture?

The theories of expression are based on the specific relationships between the artwork and the artist. In the articulation of the artwork, we can see the emotions and expressions of the artists.[2] In this case, the artwork has to have an expressive appeal to the observer who knows nothing about the artist or the artwork. But this may not always be the case. With the development of expression theories, theorists have questioned if art is too dependent on the actual psychology of the artist.[3] Many theorists have pointed out that perhaps art's expressiveness does not solely come from the emotions of an artist.[4] Many view a natural object as expressive, even though there is no artist to put emotion into it. Therefore, expression must be rooted in more than simply the intentions of the artist to convey such emotion in the artwork. Because of this, theorists changed their definition of expression and defined it independently of the artist's emotion.[5]

This introduced the development of the

1. Benedetto Croce and Douglas Ainslie, Aesthetic as Science of Expression and General Linguistic (Charleston, SC: BiblioLife, 2009): p. 12.
2. Spackman, John. "Expression Theory of Art," in *Encyclopedia of Aesthetics*, vol. 2 (New York, NY: Oxford University Press, 1998), p. 139.
3. Ibid., p. 141
4. Ibid., p. 141.
5. Ibid., p. 141.
6. Michael Kelly and John Spackman, "Expression Theory of Art," in Encyclopedia of Aesthetics, vol. 2 (New York, NY: Oxford University Press, 1998), p. 142.

Figure 1 Bernini Cornaro Chapel, Gian Lorenzo Bernini, 1647–1652.

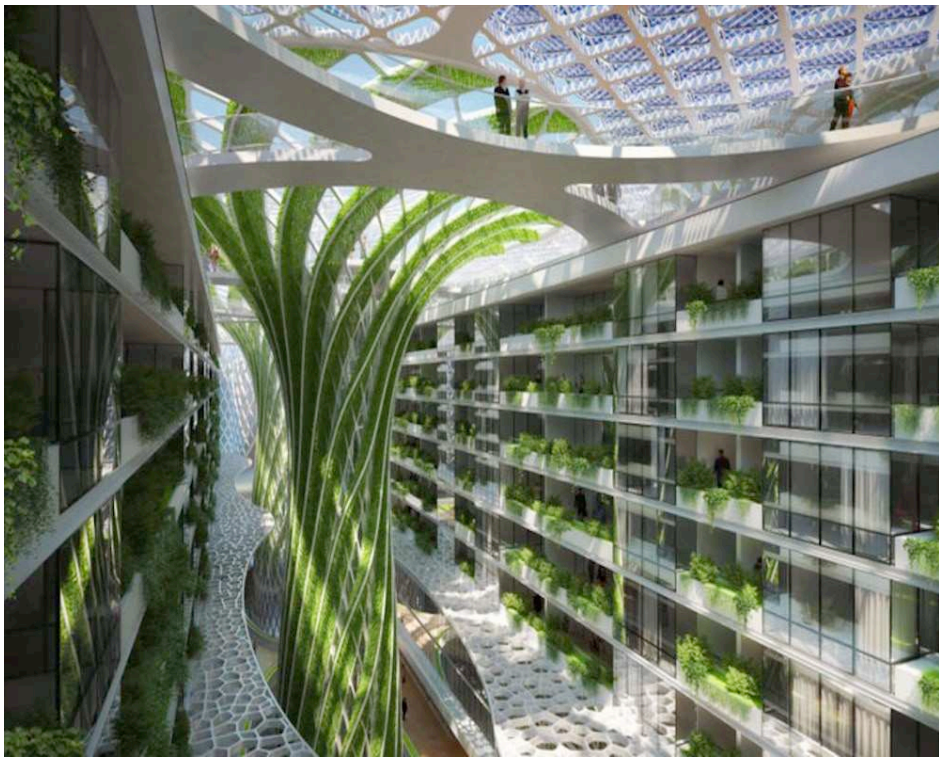


Figure 2
The Gate Residence, Vincent Callebaut.

Visual expression through green walls and patio gardens.

'arousal theory'. The theory suggests that an audience will sense certain emotions when observing a piece of art.[6] The problem with this theory is that while we may see a specific emotion being portrayed, we may not feel the intended emotion. This then makes it difficult to explain art's expressiveness in terms of emotions.

In spite of this, a new theory called the 'similarity theory' was created, and is perhaps the most influential approach to expressiveness.[7] The theory attempts to "demystify the question of how an emotion can "get into an object" by finding analogs of this phenomenon outside of the realm of art."[8] The most significant examples of this approach can be experienced through the views Peter Kivy and Stephen Davies. Both agreed that "artistic expressiveness derives primarily from the expressiveness of behaviour."[9] However, this theory can not fully uncover the expressiveness in all the arts.

While finding similarities between artwork and human emotions may be informative, it may not do justice to the expression of the work. Following this criticism on the 'similarity theory', philosopher Richard Wollheim introduces a new theory that acknowledges all existing research in the theory of expression.[10] Based on his thoughts of expression, he makes two modifications to the traditional theory. First, the artist does not have to feel the emotion which is to be expressed in the artwork at the time of its creation, but they must have access to it in his memory. Second, when artists create an art piece, they must incorporate all forms of expression in the medium. This includes all preliminary intentions behind the creation of the artwork, as well as all thoughts and emotions felt throughout the creation process.

Considering the history behind the etymology of the term expression, we can conclude that there have

7. Spackman, "Expression Theory of Art," in *Encyclopedia of Aesthetics*, p. 142.
8. Ibid., p. 142.
9. Ibid., p. 142.
10. Ibid., p.143.

been many attempts made to unify the various theories. Although this resulted in many new interpretations of the term, what can be taken away is that while the artists' intentions determine what the work expresses, they must also consider the thoughts and emotions that were behind the initial creation. Thus, expression in art is portrayed as "what has been "seen" or experienced in the inner eye of the mind, heart and soul."[11] The expression the artist is portraying is clear to the observers who know nothing about the artist.

In architecture, expression differs greatly from its portrayal in art as it is related to the character of the work. Architectural expression is based on techniques and concepts such as space, scale, lighting, composition, material, texture, colour, and environment.[12] Unlike a piece of artwork, expression in architecture "is more like a display of atmosphere, an abstract presentation of character."[13] It is usually not portrayed through the emotions and thoughts felt by the architect but rather shown through the feeling of the space or the composition expressing concepts and experiences. Correspondingly, expression in architecture is usually impersonal meaning that the emotions of the architect are not evident within the design of a space. Because of so, the expression of a specific architectural work may be perceived differently to each individual.

"There are not two terms, an object and a subjectively imputed expression, only one - the expressive object. True, the expressiveness in an object may appear differently to different persons, just as a mathematical statement may have different meanings for a kindergarten child, a college undergraduate, and a creative mathematician. But, as in this case, the variability will be owing not to the object, but to the different capacities of the different persons, conditioned by their background."[14]

The perception of expression in architecture is also dependent on historical and cultural context. Economic, political, and cultural changes all have a great influence on the design and recognition of buildings. In today's era, we are in constant sustainable development due to climate change which is widely shaping our societies. The solutions and strategies architects decide to implement into their designs will determine the expression which the building is conveying. Recently, expression in architecture is portrayed through green strategies. These include 'visible' strategies such as green roofs, green walls, green coloured features, and solar panels, as well as 'non-visible' strategies such as orientation of a building, natural ventilation, position of windows, and solar shading strategies.[15] As environmental considerations are becoming more critical in contemporary architecture, we begin to wonder if they are "actually imposing a shift in the textual narratives, the visual expression, and the spatial experience of architectural projects."[16]

Through the work of several theorists, the definition of the theory of expression has gone through various iterations. Each has had a different influence on what exactly represents the expression in a work. However, regardless of the context in which expression is observed, we can conclude that to be able to feel the expressive intentions displayed, one must know how to perceive its qualities.

Cover Image
Bibikow, Walter. "Frank Lloyd Wright's Fallingwater." n.d. Photograph. Accessed from https://www.architecturaldigest.com/frank-lloyd-wright.

Figure 1
Van Dyke, James. The Cornaro Chapel Interior with Ecstasy St. Teresa. Photograph. Approaches to the History of Art. Rome: Oberlin College, n.d. http://www2.oberlin.edu/images/Art200-08/Art200-07a.html.

Figure 2
Callebaut, Vincent. The Gate Residence. October 26, 2018. Photograph. Egyptian Street. https://egyptianstreets.com/2018/10/26/can-egypt-perpetuate-a-prosperous-future-in-sustainable-architecture/.

11. Djordje Alfirevic, "Visual Expression in Architecture," January 11, p. 11.
12. Roger Scruton, Peter Collins, Alan Gowans and James S. Ackerman, "Architecture," *Encyclopaedia Britannica,* August 23, https://www.britannica.com/topic/architecture.
13. Roger Scruton, "Expression and Abstraction," The Aesthetics of Architecture, (Princeton University Press, 1979), p. 189.
14. D. W. Gotshalk, "Aesthetic Expression," The Journal of Aesthetics and Art Criticism 13, no. 1 (September 1954): p. 81.
15. Carmela Cucuzella, "Is Sustainability Reorienting the Visual Expression of Architecture?," RACAR 40, no. 2 (2015): p. 93-94.
16. Ibid., p. 100.

Courtyard at The Aga Khan Museum in Toronto

"Let him be educated, skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of heavens."[1]

Geometry

Ornamental Geometry

By : Hamza Adenali & Suleman Khan

Ornamental

Geometry *(n)*

/ jē-ˈä-mə-trē /

A branch of mathematics that deals with the measurement, properties, and relationships of points, lines, angles, surfaces, and solids. In regards to architecture, shape, size, position and space.

French:
Géométrie

Ojibwe:
diba`akiiwin+an

Arabic:
هندسي /hndsi/

The Arabic translation for the word geometric is هندسي. Contextually this term is prevalent in Islamic architecture, where geometric designs are used to create ornament and spatial organization.

Theorists
Marcus Vitruvius Pollio
Eric Broug
Daniel Pedoe
Euclid

The lineage of the word geometry can be traced back from old french to latin and then finally to greek. [2] The root words gē, meaning earth in greek, and metria, meaning to measure, came together in the first instance of the word gēmetria. [3] It was subsequently converted to geometria in latin and then finally geometry. [4] Historical passages from greek historian Herodotus also speak of a time where egyptian kings would measure and divide land, which is argued to be the origin of the word. [5]

After its origin, Geometry was incorporated into doctrines of the seven liberal arts and has since been a part of them. [6] Grammar, rhetoric, dialectic, arithmetic, geometry, astronomy and music all came together to form the basis of knowledge used in the middle ages, [7] proving geometry's significance as a fundamental subject in these times.

At a practical level, geometry can be found in all ancient civilizations. Within the creation of huts, caves and tents, there needs to be a base level of knowledge in geometry. [8] It is arguable that at the root of architecture and its fundamental nature to provide shelter, there lies the aspect of geometry. Within the historic and contemporary practice of architecture, many great scholars and writers have discussed the significance of the relationship between architecture and geometry. In The Ten Books of Architecture, Vitruvius, when speaking about the knowledge that and architect should possess,

1. Pollio, Vitruvius, Giovanni Battista da. Sangallo, and Ingrid D. Rowland. Ten Books on Architecture: the Corsini Incunabulum. Edizioni dell'elefante, 2003.
2. "Geometry: Definition of Geometry by Lexico." Lexico Dictionaries | English, Lexico Dictionaries, www.lexico.com/en/definition/geometry.
3. Ibid.
4. Ibid.
5. Pedoe, Daniel. Geometry and the Visual Arts. Dover Publications, 1983. Peter Blundell Jones, Doina Petrescu and Jeremy Till, Architecture and Participation (Abingdon, Oxon: Spon Press, 2005)
6. Ibid.
7. Ibid.
8. Ibid.

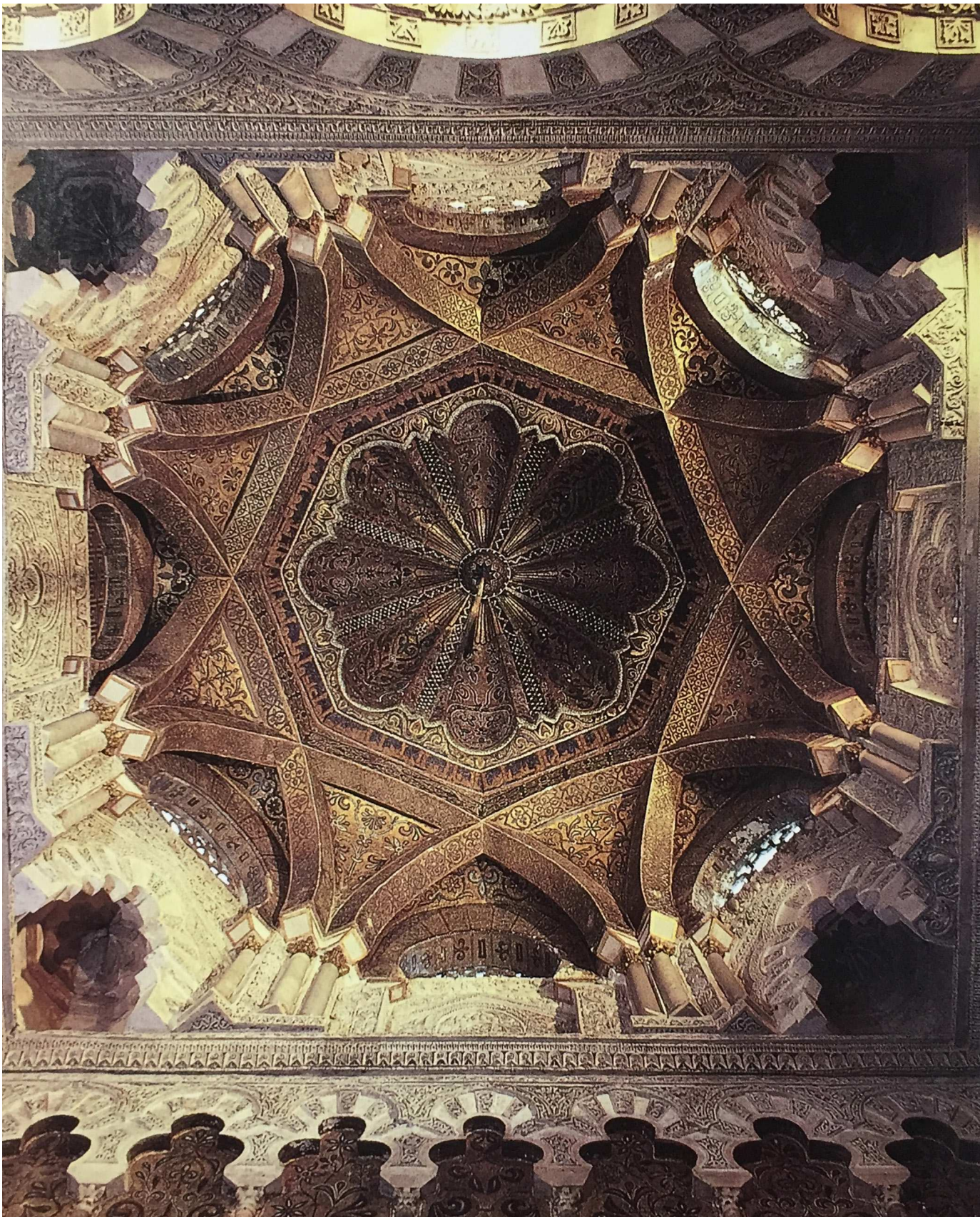


Figure 1 Dome in front of the mihrab of the Great Mosque, Córdoba, Spain, 961-965

Figure 2
Round stone window at Khirbat al Mafja year 724(43)

One of the earliest examples of geometry as ornament is this round window detail at the Khirbat al Mafja, dating back to year 724. They used the geometric pattern to manipulate light and create interesting atmosphere within the space. The craftsmen also wanted to push the envelope in terms of what could be done with masonry work which resulted in the intricate detail for that time period.

states: "Let him be educated, skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of heavens." [9]

In the realm of architecture, geometry has played a large role from structural forms to ornamental symbolism. As previously stated, geometry has been around since the beginning of the built environment, but in the most primordial and social aspect; to be used for land divisions and urban planning. Geometry in architecture is present at all scales, from the macro scale of the city to the micro scale of ornament. In ornament particularly, geometry becomes a vehicle for both functional form, and figurative meaning. This is especially apparent in Islamic geometric design. Islam being a monolithic religion, is one of the few faiths in the world that has no formal symbolism for its religion.
Unlike the Christian faith, where the cross is a symbolic representation of the religion, Islam has no pre-established symbolic form for representation. Clearly seen in history, since the first Islamic buildings in 700AD, sacred geometry acquired the task of holding symbolic prominence as well as ornamenting the building in order to convey ideas regarding the ineffable. [10] In the height of the first Islamic empire, the Umayyad's, geometric patterns decorate the walls of all programs of buildings, secular and religious alike. But geometry had a greater meaning in Islamic architecture, it became symbolism and sacred.

Known resources that explicitly explain how Islamic geometric patterns represent metaphors for specific Islamic teachings do not exist. [11] For example,

9. Pollio, Vitruvius, Giovanni Battista da. Sangallo, and Ingrid D. Rowland. Ten Books on Architecture: the Corsini Incunabulum. Edizioni dell'elefante, 2003.
10. Broug, Eric. Islamic Geometric Design. Thames & Hudson, 2016.

no written documents associate that the five-point star to the five pillars of Islamic teachings. Although, we can begin to infer the role it played in evoking the ineffable associated to the religious connection to their creator. Traditional architecture in the Islamic era, regardless of religious sect, became enthralled with geometric patterns. Embedding them into walls, pillars, even the Quran (holy book), within margins and texts. It became a way for the craftsmen of the era to pronounce their internal motivations to their faith.

'Know oh brother. . ., that the study of sensible geometry leads to skill in all the practical arts, while the study of intelligible geometry leads to skill in the intellectual arts ... that is the root of all knowledge. . ." [12]

Geometry in architecture became a symbol that exhausted verbal explanation. [13] Geometry provided the link between microcosm and macrocosm, whether between the city and the citadel, or door and window; the geometry became the language that the art form began to speak. Each pattern evoked a unique emotion and told a new story; the craftsmen became the story tellers and the architecture the medium of expression. [14]

Geometry in a contemporary society seems to get lost behind technological advancements and gearing towards minimal and modern architecture. Proceeding the Modernist movement, geometry was almost completely lost and the need for ornament was abolished. [15] Following that movement, postmodernism was critiqued for being too two dimensional and just a random juxtaposition of forms to revolt against the minimalist mind-set without being critical enough to understand the reasoning behind the ornamental forms. [16] Today, geometry as a form of expression is being reintroduced into the architectural world. When the discussion about the need for the symbolic dimension of architecture shifted and became a secondary concern, designers questioned the relevance of geometry and ornament to the discipline. After discussions about traditional designs, and contemporary building techniques have taken place in the last decade,reintegrating the symbolism and metaphoric architecture have reemerged. Designers have begun to re-investigate the properties of geometric patterns and designs to establish new possibilities with the technology available to us today. The contemporary tools we have at our disposal allow us to push the limits of what geometric designs we are able to create, while the designs themselves are rooted in nature, history and culture, translated through the use of geometric pattern language. For example, evolutionary algorithms allow designers to explore the possibilities of iterative patterns through coding. These computational programs go beyond the previous physical limitations and output ideal-formulas for designers to use that are contextually and programmatically grounded. Fundamentally, the quality of designs is increased by rooting them in traditional geometric patterns and allowing the form to be complex and interactive through the use of current day technologies.

Critically speaking, geometry can be applied more holistically to architectural practice. Most, if not all, architects in Canada are trained in mathematics- but at the undergraduate and postgraduate level we tend to leave these principles behind. Through a more in-depth understanding of geometry, architects can begin to apply the principles thoroughly within their designs. From structural expression to ornamental decoration; architecture can once again evoke emotions and tell stories through the subtle use of geometric design.

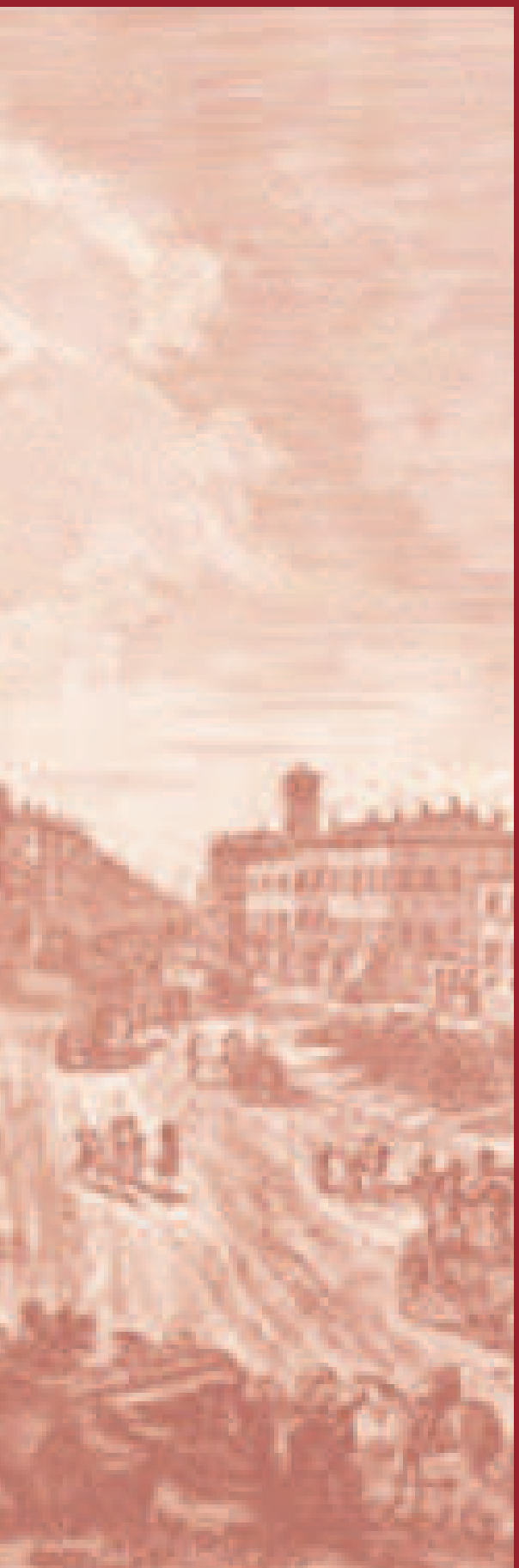
Cover Image
"Ismaili Centre & Aga Khan Museum." Entuitive. http://www.entuitive.com/project/ismaili-centre-aga-khan-museum/.

Figure 1
Kleiner, Fred S., and Christin J. Mamiya. 2005. Gardner's Art through the Ages. Twelfth Edition. Toronto: Nelson Thomson Learning. pg. 354

Figure 2
"Gallery." QFI Mosaic Tilemaker App. https://tilemaker.teachalmasdar.com/gallery/

11. Ibid.
12. Bizri, Nader el-. The Ikhwān Al-Ṣafā' and Their Rasāil: an Introduction. Oxford University Press, 2008.
13. Critchlow, Keith. Islamic Patterns. Thames & Hudson, 1976.
14. Ibid.
15. Lu. Third World Modernism: Architecture, Development and Identity. Routledge, 2011.
16. Jencks, Charles. The New Paradigm in Architecture the Language of Post-Modernism. Yale University Press, 2008.

The Piazza del Popolo (Veduta della Piazza del Popolo), Giovanni Battista Piranesi



"Historismus [had introducted a] new epoch [in philosophy, recognizing] the totally unique nature of antiquity." [1]

Historicism

by : Lisa Hoshowsky and Eischezsorush Sadiq

Historicism *(n)*

hĭ-stôr'ĭ-sĭz'əm,

Historicism in architecture refers to the belief in the impact and power that history has to such a level that the original meaning is rendered irrelevant and it is replaced by the meaning of which it is inspired by a previous period.

German:
Historismus

French:
Historicisme

Ojibwe:
Inendaagwad izhitwaawin inendam mewinzha

Theorists:
Georg Friedrich Hegel
Friedrich Schlegel
Friedrich Nietzsche
Friedrich Meinecke

Modern architects working with the idea of the "zeitgeist", meaning the "spirit of age", wanted to express this in their work. Alan Colquhoun, states that post-modern historicist architect's were attacking modernism's call to express the zeitgeist. They also rejected the avant-garde pursuit of social revolution and favoured a formalist emphasis. This lead them to be viewed as a reactionary movement.[2] It is important to note that it is not aimed to predetermined confinement but rather is the acceptance that the power of tradition is a necessary state for production.[3] Architects believed there was a need to return to eternal values embodied in classical architecture[4] which can be described as the aim to prove the possibility to achieve a perfect harmony of parts.[5] This richness of the parts consist of an unquestionable degree of paradox and contradiction that escapes lucidness of a principle in detail.[6]

Historicism took shape throughout the entirety of seventeenth century Europe but was not given a consistency of ideals until the Romantic Movement of the late eighteenth century Germany with the first recorded appearance being the term Historismus in the 1797 fragmentary notes of Friedrich Schlegel's.[7] In these he states, "Historismus [had introduced a] new epoch [in philosophy, recognizing] the totally unique nature of antiquity."[8] His definition continued to be used in Germany for the first seventy years of the nineteenth century by the likes of Ludwig Feuerbach, I.h. Ficte and

1. Friedrich, Schlegel: Zur Philologie I. In L Kritische Friedrich-Schlegel-Ausgabe, Bd. 16 (Paderborn 1981)35-41) 2015.
2. Colquhuon, Alan. "Three Kinds of Historicism ." In Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory, 202. New York: Princeton Architectural Press, 1996.
3.Ibid.
4. Ibid.
5. Darbee, Jeffrey T. "Classicism and Conservation: A Celebration of Roman Architecture ." Places 14, no. 3 (2002). https://placesjournal.org/assets/legacy/pdfs/classicism-and-conservation-a-celebration-of-roman-architecture.pdf.
6. Summerson, John Newenham. The Classical Language of Architecture. Cambridge: MIT Press, 1963. Page 8.
7.Colquhuon, Alan. "Three Kinds of Historicism ." In Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory, 202. New York: Princeton Architectural Press, 1996.
8. Friedrich, Schlegel: Zur Philologie I. In L Kritische Friedrich-Schlegel-Ausgabe, Bd. 16 (Paderborn 1981)35-41) 2015.

Figure 1 The Man on the Rack, from Carceri d'Invenzioni (Imaginary Prisons) Giovanni Battista Piranesi, 1800–1809. Showing the essence of Historicism which consists of many different styles

Figure 2
The Architect's Dream by Thomas Cole [1840]

Cole incorporates parts of architecture from Egyptian, Greek, Roman, and Gothic styles in various different parts of the painting. This painting embodies the meaning of Historicism.

later changed, presumably due to the Italian influence of their word, storicismo, in the early years of the twentieth century.[10] Its' use is strongly tied to German cultural tradition and nationalism, especially as they approached the 1930's[11] and the implications that presents after the German catastrophe of the First World War.[12]

In German context, Historicism referred to different notions attached to aspirations related to the preservation of history as well as the legitimization of history as a scientific discipline. Historicism has gone through many epochs over the years. Two of the largest weigh-ins are by professionals who were from the crisis of historicism and New Historicism.[13] For philosophy, a historical account of something is a:

> "sufficient explanation of it, that the values of anything can be accounted for through the discovery of its origins, that the nature of anything is entirely comprehended in its development… the doctrine which discount the fallaciousness of the historical fallacy."[14]

For architecture, historical knowledge and human affairs are indissociable. The works of Morris R. Cohen[15] and Friedrich Engle-Janosi[16] present that historicism is an, "explanation or evaluation by means of history and with the belief that historical knowledge is in some sense distinctly important in human affairs."[17]

In Germany, Meinicke develops the idea of a Historicism of Life which can be characterized around three groups of meaning: the vocation of history itself, a bundle of contradictory characterization, or a historical concept whose character is gradually being determined.[18]

10. Colquhuon, Alan. "Three Kinds of Historicism ." In Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory, 202. New York: Princeton Architectural Press, 1996.
11. Iggers, Georg G. "Historicism: The History and Meaning of the Term." Journal of the History of Ideas 56, no. 1 (1995): 129-52. doi:10.2307/2710011.135
12. Lee, Dwight Erwin, and Robert N. Beck. The Meaning of "Historicism". Indianapolis: Bobbs-Merrill, 1954. 570)
13. Iggers, Georg G. "Historicism: The History and Meaning of the Term." Journal of the History of Ideas 56, no. 1 (1995): 129-52. doi:10.2307/2710011.129)
14. Rosenthal, Estelle. (1991). Andre Lalande, Vocabulaire technique et critique de la philosophie. Journal of French and Francophone Philosophy; Vol 3, No 2 (1991); 133-134. 3. 10.5195/jffp.1991.29.
15. T Cohen, Morris Raphael (1947). _The Meaning of Human History_. Lasalle, Ill., Open Court. p. I3.
16. Barnes, Harry Elmer. "ENGEL-JANOSI, FRIEDRICH. The Growth of German Historicism. Pp. 101. Balti More: Johns Hopkins Press, 1944.." The ANNALS of the American Academy of Political and Social Science 245, no. 1 (May 1946): page 13. doi:10.1177/000271624624500131.
17. Iggers, Georg G. "Historicism: The History and Meaning of the Term." Journal of the History of Ideas 56, no. 1 (1995): 129-52. doi:10.2307/2710011. Page 569.

For him and other like minded people historicism is a special form of, or approach to intellectual history.[19] He called historicism:

"The greatest spirtiual revolution which [European] thought has undergone."[20]

In Italy, Benedetto Croce proposes the idea of an absolute historicism- storicisimo assoluto. He believed, "historicism (the science of history), scientifically speaking, is the affirmation that life and reality are history and history alone,"[21] man can only know what he created therefore true knowledge is historical. Croce believed that historicism is a logical category and therefore present in any age but that the nineteenth century can be properly named for it.[22] His successor was R.G. Collingwood who sought to historicise philosophy and emancipate history from science.[23]

Another sense in which the term historicism has been used is defined by Louis Gottschalk as, "it insists upon the relation of ideas to historical circumstances; it maintains that ideas are only reflux functions of the sociological conditions under which they arose."[24] This definition can be classified under Historical Relationism, (history or values), and Relativism, which could be called, "that of knowledge."[25]

Finally, Karl Popper greatly despised how historicism was being used but his critiques lead to new definitions, describing historicism as, "a methodology of the social sciences that emphasize their historical character and aim at historical prediction."[26] Going further he believes that the history of mankind determines by its inherent laws, ourselves, our problems, our future and even our point of view, "historicism is out to find the path on which mankind is destined to walk."[27]

Based on these categories we can summarize historicism as follows; the belief that the truth, meaning and value of anything, is to be found in its history. More narrowly the antipositivistic and antinaturalistic view that historical knowledge is a basic, or the only requirement for understanding and evaluating man's present political, social, and intellectual positions or problems. The first seeks to express a perspective in the philosophy of history within which there may be further diverse positions and both seek to provide a base for further systematic classifications.[28] Even without a concise and agreed upon definition it is clear by historicism's continuous presence in the great debates of many fields that mankind cannot extract himself from the role historicism plays in all things.

Cover Image
The Piazza del Popolo (Veduta della Piazza del Popolo), copper etching printed in ink, Giovanni Battista Piranesi, 1750. MET museum , New York, New York, United States.

Figure 1
The Man on the Rack, from Carceri d'Invenzioni (Imaginary Prisons), plate 2,printed,copper etching printed in ink, Giovanni Battista Piranesi, 1800–1809. MET museum , New York, New York, United States.

Figure 2
Thomas Cole, The Architect's Dream, oil on canvas, 1840, Toledo Museum of Art, Ohio, United States

18. Lee, Dwight Erwin, and Robert N. Beck. The Meaning of "Historicism". Indianapolis: Bobbs-Merrill, 1954. 570
19. Meinecke, Friedrich. 1936. Die entstehung des historismus. München und: R. Oldenbourg.
20. Beard, Charles A. and Vagts, Alfred, Currents of Thought in Historiography, The American Historical Review, Volume 42, Issue 3, April 1937, Pages, https://doi.org/10.1086/ahr/42.3.460 pg 466.
21. Schapiro, J. Salwyn. Journal of the History of Ideas 2, no. 4 (1941): 505-08. doi:10.2307/2707024.p. 65.
22. Lee, Dwight Erwin, and Robert N. Beck. The Meaning of "Historicism". Indianapolis: Bobbs-Merrill, 1954.572
23. Ibid. 573.
24. Gottschalk, Louis "The Historian and the Historical Document," Social Science Research Bulletin, no. 53 (I945), p. 25
25. Lee, Dwight Erwin, and Robert N. Beck. The Meaning of "Historicism". Indianapolis: Bobbs-Merrill, 1954.574
26. Popper, Karl. "The Poverty of Historicism, I." Economica, New Series, 11, no. 42 (1944): 86. doi:10.2307/2549642.
27. Lee, Dwight Erwin, and Robert N. Beck. The Meaning of "Historicism". Indianapolis: Bobbs-Merrill, 1954.575
28. Ibid. 577

Sydney Opera House, Jorn Utzon,1973

"If you are innovating, you are dealing with new concepts, ideas and techniques. As an architect you are honour-bound to your client to understand the new and its implications, to do your homework and prepare as well as possible if you intend to question the rules and move architecture forward in some way. Where innovation in architecture can occurs there is an implicit requirement for the architect to resort to experimentation, dedicated shepherding, continuous love and care, testing, mocking up and back again and again to get things right. Mock-ups are required in order to explain and demonstrate, to learn, refine, tune and to achieve the right overall assembly and performance."[1]

Innovation

by : Eric Lalonde & Brianne Lauzon

Innovation *(n)*

/ɪnəˈveɪʃ(ə)n/

To introduce new things or methods into practice, is by definition to "innovate". In the practice of architecture or engineering, innovation is the application or exploit of a new idea.

French:
Innovation

Latin
Innovus, Inovare

Cree
Ahtisihcikewin,

Theorists
Gérald Gaglio
Joseph A. Schumpeter
Norbert Alter

The term innovation dates back to the mid 15 century as it stems from innovationen in late Latin.[2] In Latin, innovation is translated as innovus or inovare, which means to "alter, "renew, restore". The oxford dictionary of current English defines innovation as to "bring in new methods, ideas, etc.; make changes in".[3] Le Robert 1 french dictionary describes innovation as the action of "inover" which is to introduce something within that, which is pre established.[4] In latin, innovation is translated as innovus or inovare, which means to "alter, "renew, restore". In Cree, innovation is translated as ahtsihcikewin which means the act of innovation.[5]

To introduce new things or methods into practice is, by definition, to innovate. In the practice of architecture or engineering, innovation is the application or exploitation of a new idea. In the history of designs for building projects, architects and engineers would take part in innovation as a part of their bespoke [6] — the multidisciplinary nature of the architectural leads to an abundance in categories ti approahc the topic. Whether technological, sustainable, cultural or social, innovation can offer a broader framework to address the specificity of architectural innovation.

1. Brookes, Alan J., and Dominique Poole. "Exploring rehearsing, delivering." In Innovation in Architecture: a Path to the Future, edited by Alan J.Brookes and Dominique Poole, 16. London & New York: Spon Press, 2004.
2. "Innovation (n.)," Index, accessed September 25, 2019, https://www.etymonline.com/word/innovation#etymonline_v_30060.
3. The Oxford Dictionary of Current English, 380. Oxford: Oxford University Press, 1989.
4. Robert, Paul. Le Robert 1, 1006. La Société du nouveau littré, 1981.
5. Cree Dictionary
6. Brookes, Alan J., and Dominique Poole. "Introduction." In Innovation in Architecture: a Path to the Future, edited by Alan J.Brookes and Dominique Poole, 1-15. London & New York: Spon Press, 2004

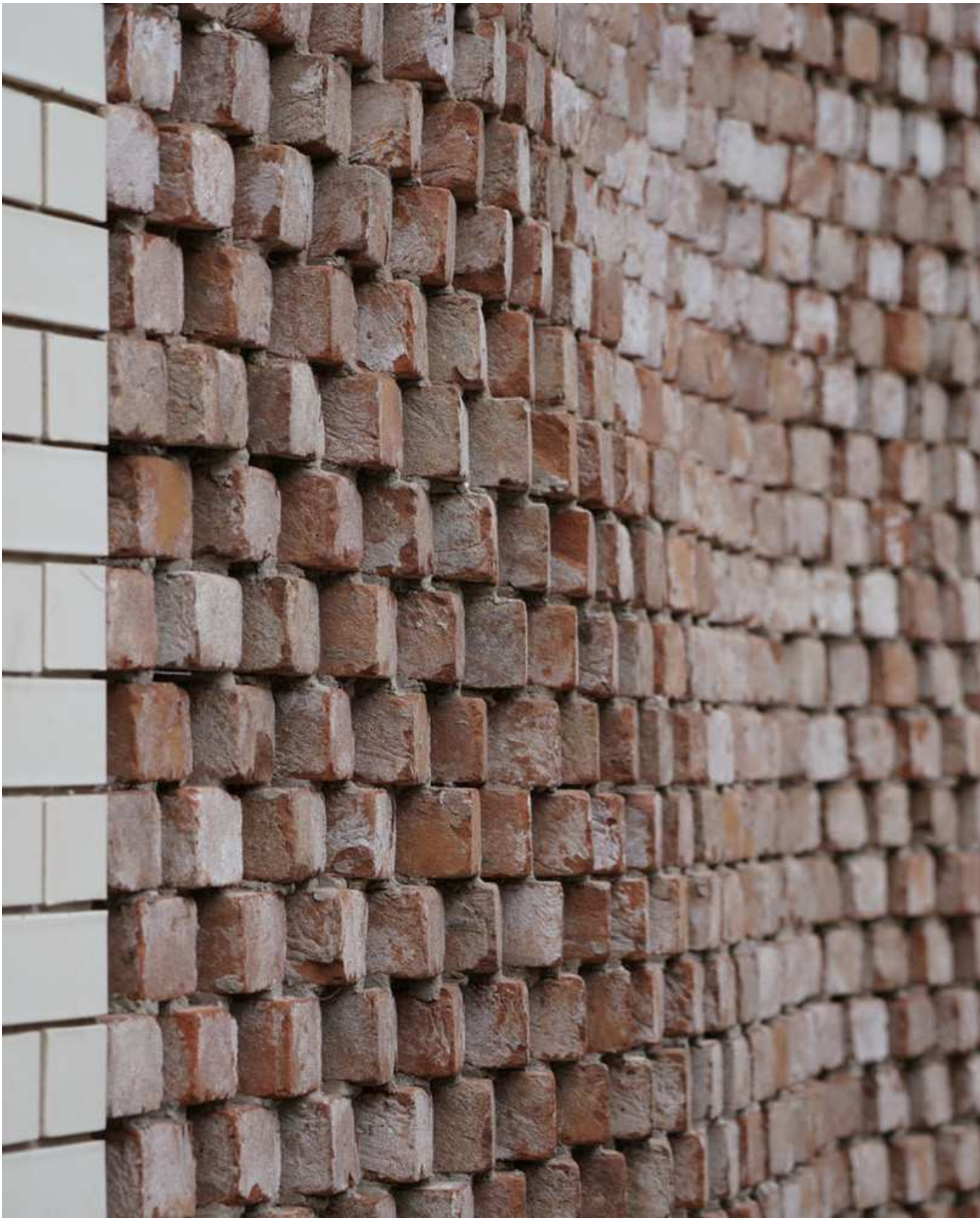


Figure 1 Holographic Brickwork, Fologram Talks, 2019.

Figure 2
Sagrada Familia, Antonio Gaudi, 1984.

Gaudi's Sagrada Famila in Barcelona demonstrates innovative architectural style through his study of natural elements.

It is important to note that the Innovation in Architecture: a Path to the Future not only offers a multitude of innovative case studies, but they are not of the importance of the professional nature of architecture. Throughout the history of architecture, the built-environments reflected what kind of technology was available to us at the time. [7] Here are only two examples of architectural innovators among many: Buckminster Fuller, The Geodesic Dome in 1954 and Antonio Gaudí's Sagrada Familia, Barcelona.[8]

Fuller and Gaudi each created architecture, unlike any other person, has ever done before. Fuller believed in using material wisely, efficiently, and believed to find ways in which living and making things that were in harmony with the world.[9]

Gaudi studied nature around him, and developed his own vision of how to create physical three-dimensional forms, these models then became a way for him to define geometry from which masons could build.[10]

For both Fuller and Gaudi in the twentieth century, strict discipline of conventional architecture was not their frame of reference. They were all driven by their new way of thinking, a new set of priorities, a new driving force.[11] A reason why innovation bore fruit is because it exceeded conventional training and rules of that era in time.[12]

Architecture no longer needs to reflect on the planar, orthogonal and repetitive processes of the traditional assembly line; architects can think outside the box and give birth to a new way of thinking and seeing.

7. Brookes, Alan J., and Dominique Poole. "A process-oriented architecture." In Innovation in Architecture: a Path to the Future, edited by David Kirkland, Nicholas Grimshaw & Partners Ltd, 63-80. London & New York: Spon Press, 2004.
8. Brookes, Alan J., and Dominique Poole. "An engineer's perspective" In Innovation in Architecture: a Path to the Future, edited by Mike Cook, Buro Happold, 105-117. London & New York: Spon Press, 2004.
9. Ibid. 107.
10. Ibid. 107.
11. Ibid. 107.
12. Ibid. 107.

In Sociologie De l'Innovation there is mention of Joseph A Schumpeter, who states that there is an abundance of productive combinations that can arise from combining disciplines.[13] The influence of other fields in parallel with architecture is a fruitful avenue for innovation.

For example, cutting edge technology in the twenty-first century is integrating virtual concepts within the physical architectural landscape.[14] The combination of virtual and physical was into practice in 2002, and there has since been more technological advancement such as AR (augmented reality)[15] and VR (virtual reality).[16] Thus, it is clear that architecture is driven by innovation, which allows the inception of better-built environments.

Cover Image
"Australian Pharmacists Empower Consumer Savings of $11 Per Year." Australian Pharmacists Empower Consumer Savings of $11 Per Year - Vax Before Travel. Accessed November 13, 2019. https://www.vaxbeforetravel.com/pharmacist-vaccination-services-reduce-costs-and-are-easily-accessed.

Figure 1
"Fologram." Fologram. Accessed November 12, 2019. https://fologram.com/#case-studies.

Figure 2
Gaudí i Cornet, Antoni. Begun 1882, Image: 1984. Sagrada Familia, View Description: Ornamented east entrance portal. Religious Buildings. https://library-artstor-org.librweb.laurentian.ca/asset/AWSS35953_35953_34200079.

13. Gérald Gaglio, "Sociologie De l'Innovation," Que Sais-Je ?, 2011.
14. Wake, Warren K., and Sally L. Levine. "Complementary Virtual Architecture and the Design Studio." Journal of Architectural Education (1984-) 56, no. 2 (2002): 18-22.
15. Xiangyu Wang1, 2, x.wang@arch.usyd.edu.au. 2009. "Augmented Reality in Architecture and Design: Potentials and Challenges for Application." International Journal of Architectural Computing 7 (2): 309–26.
16. Erk, Gul Kacmaz1. 2016. "Living in The Matrix: Virtual Reality Systems and Hyperspatial Representation in Architecture." International Journal of New Media, Technology & the Arts 11 (4): 13–25.

Post Office, Sudbury, Ontario. 1910.

""La mémoire est un phénomène toujours actuel, un lien vécu au présent éternel ; l'histoire, une représentation du passé."(Nora, XIX)[1]

Memory

by : Noémie Lavigne & Emilie Renaud

Memory *(n)*

/ˈmem(ə)rē/

"[...] allowing us to re-experience events from our past [...] Memory underlines other key psychological and behavioural processes such as perception, language and movement. And memory is also crucial for our sense of consciousness: without memory we would have no real sense of self or personal identity" (Oxford, 439)[2]

French:
Mémoire, lieu de mémoire

Ojibwe

Theorists
Pierre Nora
Jean-Luc Piveteau
Vincent Berdoulay
Paul Ricoeur

In architecture, history is a critical component confirming what has happened in the past. One's ability to retain the knowledge obtained from this history also demonstrates a capability to contribute to critical thinking. In this context, memory is expressed to be a pervasive phenomenon; where the lived is the present, and a story is an expression of the past.[3]
Our memories are rooted to specific places while using our spatial awareness in that given moment.[4] Through the spatial cognitive process, we analyze place-based information to create place-based memories.[5] Pierre Nora, an important theorist states that in architecture, memory plays a significant role within the physical environment, contributing to the creation of a sense of place, while the progression of time, events and alterations to the physical environment contribute to history.[6]

Territory, or land, can be thought of as identity.[7] Regardless of the size of the society or background one may come from, culture, history and memories naturally impact how people present themselves and their origins.[8] In any cultural background, identity is defined by many factors including land, culture, language, religion, social class, ethnic groups or sexes.[9] As Berdoulay states, a universal understanding of the modern world has been created.[10] It is important to note that each of the characteristics above these, create various perceptions through autonomy and reflection, whereas individuality is fundamentally expressed through space and culture.[11]

1. Nora, Pierre. Les Lieux De Mémoire : La République. Éditions Gallimard, 1984. Page XIX.
2. Tulving, Endel, and Furgus Craik. Oxford Handbook of Memory. 2000. New York, Oxford University Press, 2007, pp. 439–441. Accessed 25 Sept. 2019. Page 439.
3. Nora, Pierre. Les Lieux De Mémoire : La République. Éditions Gallimard, 1984. Page XIX
4. Ibid, 3.
5. Eades, Lucas Gwilym. "Chapter 2: Place-Memes: Indigeneity, Identity and Performance." In Maps and Memes: Redrawing Culture, Place and Identity in Indigenous Communities, 30.
6. Nora, Pierre. Les Lieux De Mémoire : La République. Éditions Gallimard, 1984. Page XVI
7. Mercier, Guy. "La territorialité des lieux de mémoire: à qui appartient le Vieux-Québec?" in Entre Lieux Et Mémoire : L'inscription De La Francophonie Canadienne Dans La Durée. Ottawa, CA: Université d'Ottawa, 2009. 187.
8. Ibid, 7.

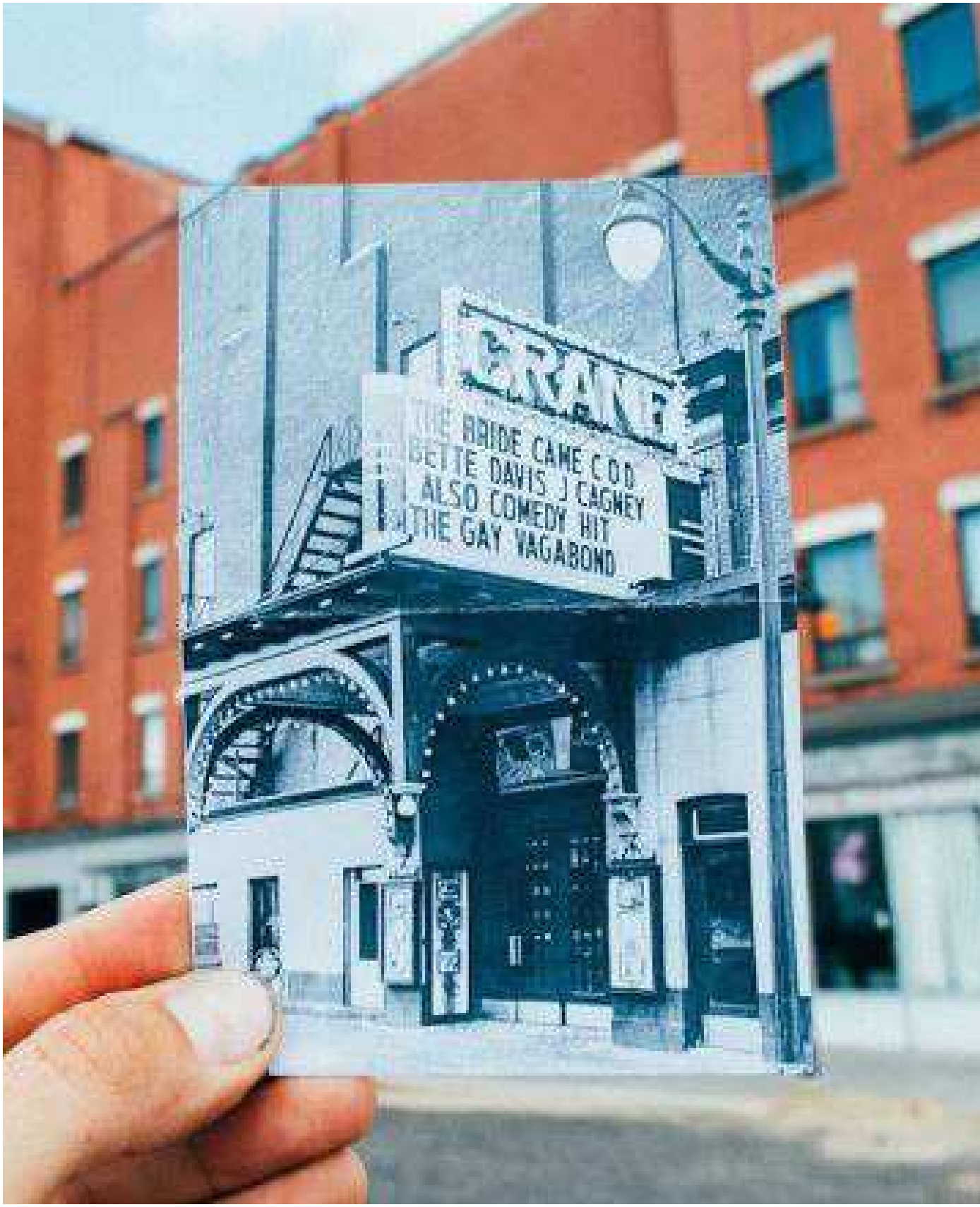


Figure 1 The Grand Theatre, W. Harland, 2015.

Figure 2

Eiffel Tower, Paris, France. Gustave Eiffel, 1889.

Image representing the timeless qualities of place-based meemories, the Eiffel Tower being an iconic example.

However, all of this is only recognizable as a result of our memories.[12] In current society, the political and the social also alter these initial memories.[13] While memories are developed through language, time, space and traditions, place plays a critical role as well. Referring to the symbolic and physical environment, together, memory and place create a tangible reality.[14] Culture of the past is considered to be so rich that symbolic or physical manifestations have been created in the built environment.[15] These monuments allow us to remember the dense history by creating place-based memories important to our societies.[16]

"La mémoire n'est aucunement paralysante, mais au contraire profondément libératrice" (Groulx, 24)[17]

Memory also reflects power relations, which can frame memories of our built environment.[18] Through repetition and the transmission of knowledge; the built environment or occurred events become what we associate with our memories.[19] As the built environments change over time, so do perceptions and memories. Through natural evolution, the articulation of architecture does not eternally remain the same.[20]

At times, the creators become the destroyers through the abolishing of architecture, over time memories and the story of place is too, left to dissolve.[21] Memories are directly linked to history and physical queues, leaving our societies fragile when these grounded monuments are lost. However, the cultural statement within the subject of architecture becomes a critical demeanor.[22] The art of architecture, even when

12. Mercier, Guy. "La territorialité des lieux de mémoire: à qui appartient le Vieux-Québec?" in Entre Lieux Et Mémoire : L'inscription De La Francophonie Canadienne Dans La Durée. Ottawa, CA: Université d'Ottawa, 2009. 187.
13. Ibid, 12.
14. Ibid, 12.
15. Ibid, 12.
16. Eades, Lucas Gwilym. "Chapter 2: Place-Memes: Indigeneity, Identity and Performance." In Maps and Memes: Redrawing Culture, Place and Identity in Indigenous Communities, 33. McGill-Queen's University Press, 2015.
17. "Memory is not paralysing, but deeply liberating"
Groulx, Patrice. "Les lieux de mémoire peuvent-ils fortifier les collectivités francophones" in Entre Lieux Et Mémoire : L'inscription De La Francophonie Canadienne Dans La Durée. Ottawa, CA: Université d'Ottawa, 2009. Page 24.
18. Bevan, Robert. The Destination of Memory : Architecture at War. 2nd ed. London, UK: R
eakton books, 2016. Page 30.
19. Ibid, Page 27.
20. Ibid, Page 18.

destroyed, has the ability to repeat history through the articulation of the legacies they leave behind.[23] As Robert Bevan affirms, architecture becomes the foundation of the memories that shape our identities.[24]

At the very core, theory is to wonder and question what occurred in the past.[25] In the field of architecture, the ability to acknowledge and understand why things are done the way they are, is crucial in order to find success. Nevertheless, how does memory contribute to this? Memory is linked to a place, as well as territory.[26] Over the course of time, territory has become increasingly influential becoming a third critical element to the theory of memory.[27] Through evolution, the connection to place and memories is instead something that does not change but rather becomes strengthened. If memories are history, one could argue that identities are embedded within societies more so than before.[28] Through time, buildings follow the flow of historical events; as old buildings are destroyed, new buildings are created, thus continuously changing memories and connected identities.[29]

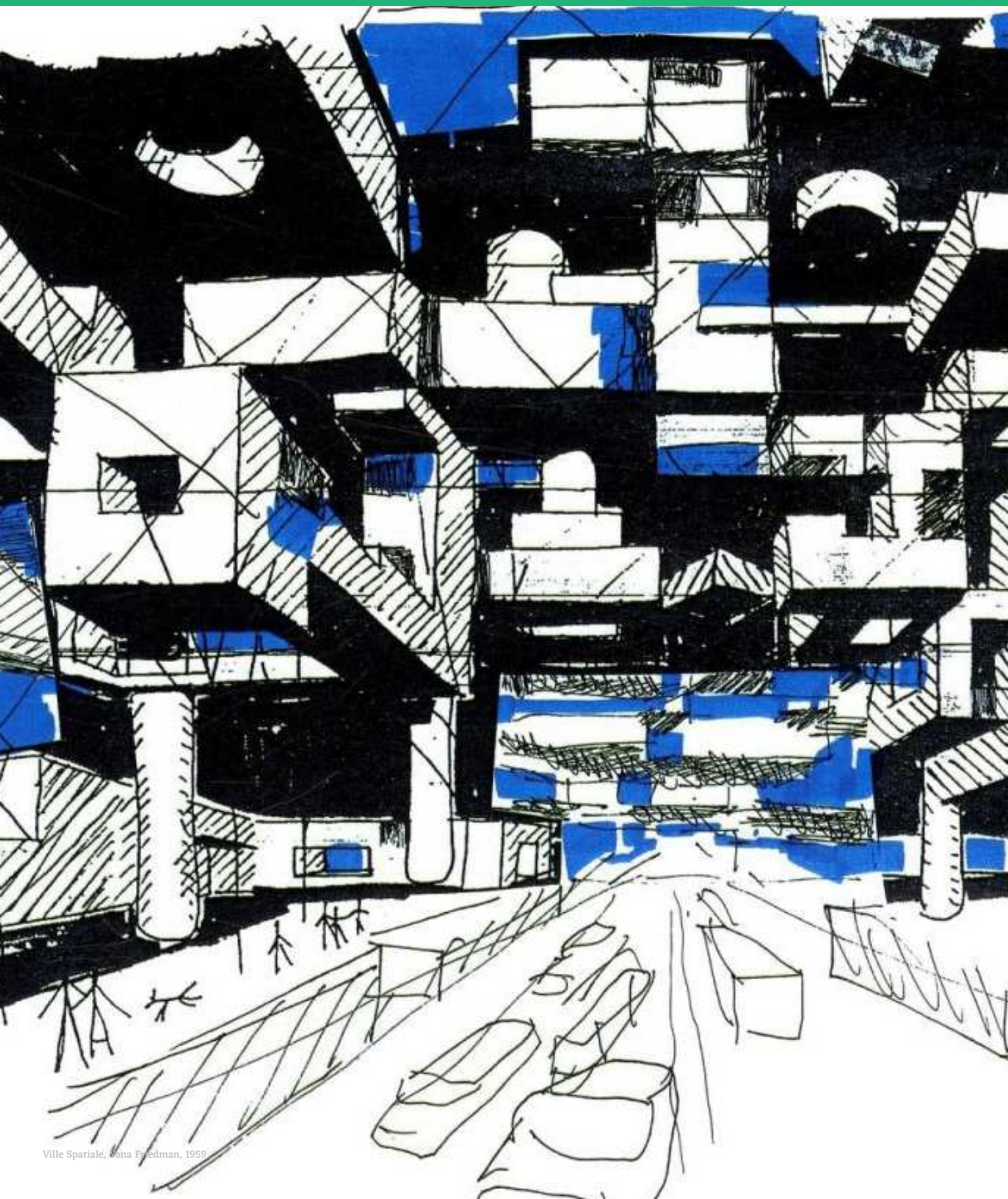
"To lose all that is familiar - the destruction of one's environment - can mean a disorientating exile from the memories they have invoked ... It is the threat of a loss to one's collective identity and the secure continuity of those identities (Even if, in reality, identity is always shifting over time)." (Bevan, 24)[30]

Cover Image
Unknown. "Post Office Sudbury Ontario." n.d. Postcard. Accessed from Toronto Public Library. Picture 1910 English.

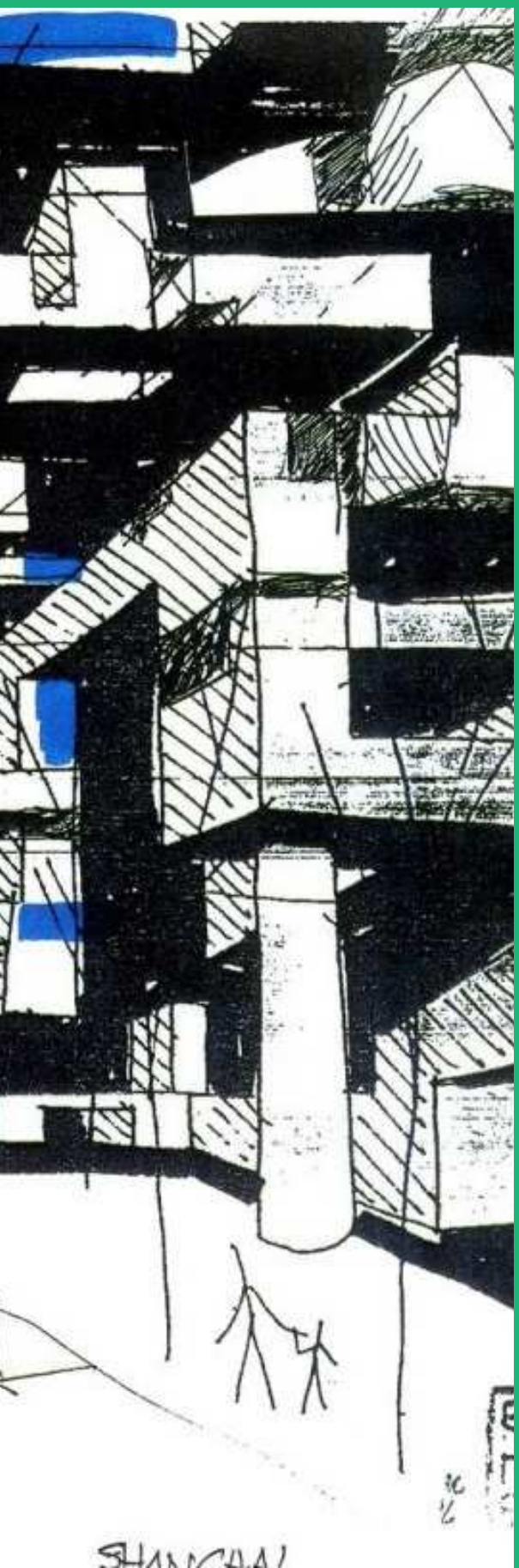
Figure 1
Dear Photographs."The Grand Theatre in downtown Sudbury" n.a. n.d. Photograph. Accessed from CBC article (2015).

Figure 2
Hornstein, Shelley. Losing Site : Architecture, Memory and Place. Farnham: Ashgate, 2013. Cover.

21. Matheny, Rabekah. "Creating Meaningful Memories Through Sensory Experiences." Ted Talk, 2016.
22. Bevan, Robert. The Destination of Memory : Architecture at War. 2nd ed. London, UK: R
eakton books, 2016. Page 19.
23. Ibid, Page 228.
24. Ibid, 23.
25. Chupin, Jean-Pierre. "Design Thinking by Analogy in Architecture." Lecture. presented at the McEwen School of Architecture for Architectural Theory ARCH5006, September 25, 2019.
26. Jean-Luc Piveteau, "Le Territoire Est-Il Un Lieu de Mémoire ?," Espace Géographique 24, no. 2 (1995): 115, https://doi.org/10.3406/spgeo.1995.3364.
27. Ibid, 26.
28. Nora, Pierre. Les Lieux De Mémoire : La République. Éditions Gallimard, 1984. Page XXV.
29. Bevan, Robert. The Destination of Memory : Architecture at War. 2nd ed. London, UK: R
eakton books, 2016. Page 22.
30 Ibid, Page 24.



Ville Spatiale, Yona Friedman, 1959



"Architecture doesn't need to be liberated. Its role is to assist the freedom of the people.[1]"

Movement

by : Clare Chatigny & Joshua Vitez

Movement *(n)*

/ˈmo͞ovmənt/

A flexible term that embodies nomadic possibilities of built form which articulates a variable class of a socially adaptable environment.

French
mouvement

Ojibwe
babaamigozi[2]

Hungarian
mozgalom

Theorists
Yona Friedman
Antonio Saint'Elia
Allan Wexler
Loyd Kahn
Bob Easton

Movement by regular dictionary definition can mean "an act of changing physical location or position or of having this changed.[3]" When analyzing the term from an architectural perspective, it can have many meanings. Looking at movement from a mobility perspective and also through the lens of architecture, its definition becomes incredibly non-traditional. This notion will be analysed through the works of the Futurism movement, spearheaded by Antonio Sant'Elia, and French Architect, Yona Friedman. The main concept promoted by Friedman and others, which held that users of buildings and settlements should have a say in plans and changes to them. Architecture would consist of structural frameworks, infrastructures, and services raised above the ground that would be infinitely adaptable.[4] Such views influenced Constructivism and Antoine Pevsner in the 1920's and the Metabolist group in Japan in the 1960's and 1970's.

Friedman is Hungarian-born, and moved to Paris in 1957. He built his reputation as an architectural theorist and visionary designer. He joined a group of Architects who founded the Groupe d'Étude d'Architecture Mobile (GEAM—Group for the Study of Mobile Architecture). The work that was done "evolved the belief for the city as a primary permanent infrastructure or framework with a changeable impermanent secondary structure determined by the users and erected using simple technologies.[5]" He

1. "Architectural Principles." yonafriedmancom. Accessed September 16, 2019. http://www.yonafriedman.nl/?page_id=1122.
2. Ojibwe definition: The Ojibwe People's Dictionary, s.v. "Move," accessed September 20, 2019, https://ojibwe.lib.umn.edu/search?utf8=%E2%9C%93&q=move&commit=Search&type=english
3. Lexico by Oxford Dictionaries, s.v. "Movement," accessed September 26, 2019, https://www.lexico.com/en/definition/movement.
4. "Mobile Architecture ." Encyclopedia.com. Encyclopedia.com, 2019. https://www.encyclopedia.com/education/dictionaries-thesauruses-pictures-and-press-releases/mobile-architecture.
5. Encyclopedia.com. Encyclopedia.com, 2019. https://www.encyclopedia.com/education/dictionaries-thesauruses-pictures-and-press-releases/friedman-yona.

Figure 1 People's Canopy, People's Architecture Office, 2015

Figure 2
Houseboat Haarlem Shuffle, Van Ommeren Architecten, 2017.

This neutral energy houseboat is located in the Spaarne river, in Haarlem, NL .

believed that inhabitants should have the infrastructure adapt to oneself, rather then having oneself adapt to the infrastructure. Friedman published several books expounding his ideas, including L'Architecture Mobile (1970) and Alternatives Énergétiques (1980). He is quoted saying: "One's behaviour must change with time and architecture is part of behaviour.[6]" His theories promote a shift in thought about traditional architecture and encourage the challenging of established ideas. Friedman has been considered as a large contributor to Experimental architecture, while also focusing on Megastructures, as seen in the sketch on the cover image, and Mobile architecture.

The Futurist movement started with the arts and eventually moved into the realm of architecture: Its most important work being the Manifesto of Futurism (1909) by Italian, Filippo Tommaso Marinetti[7]. The most prominent Futurist architect would be Antonio Sant'Elia who believed that the city was not meant to last, and each subsequent generation was expected to reinterpret and reinvent the city. Futurism stemmed from the emergence of new technologies and materials in the early 20th Century: it represented the height of innovation "characterised by long horizontal lines and streamlined forms suggesting speed, dynamism, movement and urgency.[8]"

The notion of freedom comes to light through the inhabitation of mobile architecture; given the opportunity, people relish the independance that mobility provides them. The idea of tiny homes has been around since the Pioneer age, but they have only recently over the last decade become popular once again.

6. MuseoMAXXI. YouTube. YouTube, July 17, 2017. https://www.youtube.com/watch?v=gSwyGcsK5EM.
7. "Architecture." Guggenheim, October 31, 2016. https://www.guggenheim.org/arts-curriculum/topic/architecture.
8. "Designing Buildings Wiki." Futurist architecture- Designing Buildings Wiki, November 27, 2018. https://www.designingbuildings.co.uk/wiki/Futurist_architecture.

These homes emerged from the huts, igloos, wigwams, tents, and grass huts during the early settler days. These homes also drew influence from mobile trailer-home and camping cars. The Sioux, Inuits and Samoans were considered the earliest originators of tiny homes.[9] "Yurts" or "Gers" were established in Mongolia in 1000BC as practical small mobile homes. Tipis were used starting around 500BC by Native Americans, as these small houses were not only portable but were seen to be waterproof and extremely heat-resistant.[10] Throughout the 1800's the southern style of a Shotgun House with heavy Haitian influences began to emerge.

Although ideas about compact forms of habitation were explored many times throughout the history of architecture, it was not until more recent history that modern societies started revisiting the idea of compact architecture as a viable living solutions. In the 1970's, a man by the name of Allan Wexler re-pursued the traditional idea of living in a compact space. In 1973, Loyd Kahn and Bob Easton released the book called "Shelter" which drove the idea of living in a compact space even further to the masses. Throughout the 1990s the environmental benefits of living smaller were starting to become recognized which fuelled the start of the tiny home movement.[12] But, it was not until 2012 when several companies began to form that embraced the designing and creating tiny homes both mobile and stationary. Tiny homes provide their inhabitants to have a not only a sense of flexibility, financial freedom, but the ability to live a completely mobile lifestyle from where they work, live and play.

Another form of mobile architecture would be the house boat as the intended use would be dwelling, not only is it a boat that is or can be moored, but also can still function with the mobility of a boat. "The reason for this broad definition is that houseboats are used, designed and modified different all over the world.[13]" In France modified freight boats are commonly used, and in the Netherlands you will almost exclusively find houseboats that are moored to the shore. An additional form of moblie architecture would be art or architectural installation, as shown in figure 1. Installations are generally easy to disassemble and relocate to be reassembled in a new place. They can be used as a commentary on consumption of space and societal identity in relation to symbolic emphasis placed on the spaces we inhabit.

Movement in terms of architectural design is unique as it is seen to be a flexible term that can encompass a much larger spectrum. This version of defining movement is focused on the nomadic possibilities of built form which articulates a variable class of socially adaptable movement of architecture. We as people prior to the industrial era of civilization embodied a nomadic lifestyle that was lost throughout time. In relation to Futurism, architectural form relates to advanced thinking and the availability of progressive technologies to satisfy the changing needs of the people.

"We must invent and rebuild our Futurist city like an Immense and tumultuous shipyard, active, mobile, and everywhere dynamic."[14]

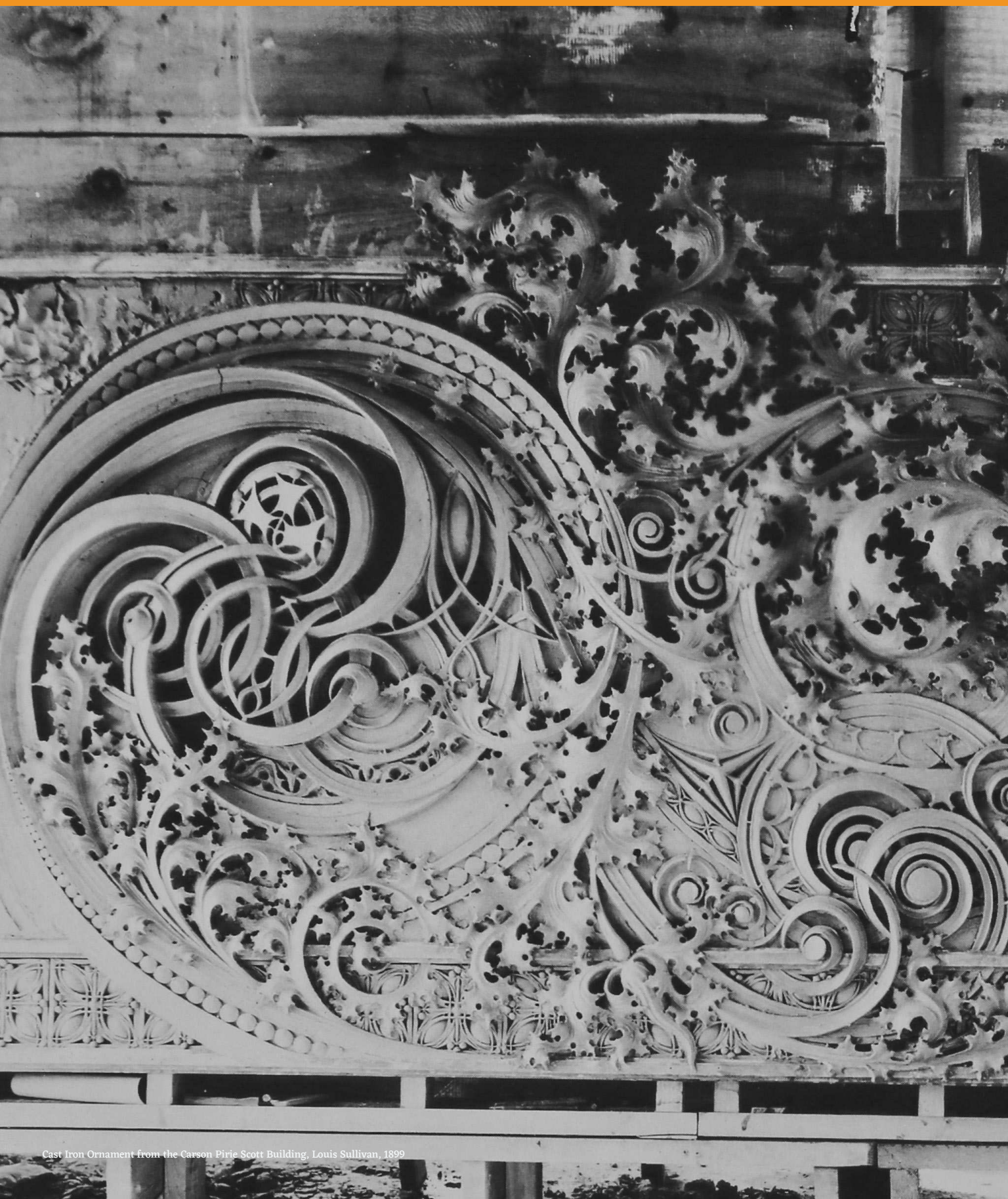
Architecture is a way in which people are finding ways back to living a minimalist traditional lifestyle as architecture is designed and created to suit the needs of its inhabiter.

Cover Image
Friedman, Yona. Ville Spatiale, Paris . 1959. Conceptual Sketch.

Figure 1
People's Architecture Office (PAO), ICP, Bernie Blackburn, Tony Worrall, and Neon Creative Studios. "People's Canopy." Photograph. People's Architecture Office. BEIJING, HONG KONG, SHENZHEN: People's Architecture Office, September 2015.

Figure 2
Janssens, Eva. Houseboat Haarlem Shuffle. n.d. Photograph.

9. About the Homestratosphere Editorial Staff & Writers. "The History and Evolution of Tiny Homes." Home Stratosphere. Home Stratosphere, April 25, 2019. https://www.homestratosphere.com/tiny-homes-history/.
10. "Architectural Principles." yonafriedmancom. Accessed September 16, 2019. http://www.yonafriedman.nl/?page_id=1122.
11. Ojibwe definition: The Ojibwe People's Dictionary, s.v. "Move," accessed September 20, 2019, https://ojibwe.lib.umn.edu/search?utf8=%E2%9C%93&q=move&commit=Search&type=english
12. Lexico by Oxford Dictionaries, s.v. "Movement," accessed September 26, 2019, https://www.lexico.com/en/definition/movement.
13. "Mobile Architecture ." Encyclopedia.com. Encyclopedia.com, 2019. https://www.encyclopedia.com/education/dictionaries-thesauruses-pictures-and-press-releases/mobile-architecture.
14. Encyclopedia.com. Encyclopedia.com, 2019. https://www.encyclopedia.com/education/dictionaries-thesauruses-pictures-and-press-releases/friedman-yona.



Cast Iron Ornament from the Carson Pirie Scott Building, Louis Sullivan, 1899

"Of the three conditions that apply to every form of construction - that what we construct should be appropriate to its use, lasting in structure, and graceful and pleasing in appearance - the first two have been dealt with, and there remains the third, the noblest and most necessary of all."[1]

Ornament

by : Marina Schwellnus & Stacy Smith

Ornament *(n)*

\ ˈȯr-nə-mənt\

Ornament: the addition of beautifully crafted elements to a building, object or person.

French:
ornement

Portuguese:
enfeite

Ojibwe
wawezhi' (translation of 'to decorate', 'to adorn')

Theorists
Leon Battista Alberti
Owen Jones
Antoine Picon

archaic : the study and expression of nature and its laws [ie: proportion].
- Alberti and Jones

For the majority of human history, ornament has been inspired by the natural world as a way to capture its beauty, or call on divinities. In the 15th century Italy, Renaissance Man Leon Battista Alberti described three main principles of the designing of architecture, based on surviving texts from Ancient Greece and Rome, as well as the ruins he was living near to. These principles were: that it should function well according to its program, that it should stand for hundreds of years to come, but most importantly, that it should be beautiful.[2] Such beauty found in ornament had in turn three sources: the inherent qualities of the material as created by nature, the craftsman's hand (making) and the intellect thinking (designing).[3] It is interesting to note that Alberti did not specify whether the craftsman and the intellect had to be two different people, but they had to work in collaboration, and with nature, to create a successful ornament.

Owen Jones compiled his book entitled The Grammar of Ornament about four hundred years later, documenting many ornaments from different cultures around the world in an attempt to find commonalities between them and create a series of guidelines (propositions) to follow in the generation of new

1. Leon Battista Alberti, "Book Six: Ornament," In *On the Art of Building in Ten Books,* trans. by Joseph Rykwert, Neil Leach, and Robert Tavernor, (Cambridge: The MIT Press, 1988), 155.
2. Ibid.
3. Ibid, 159.

Figure 1 Egyptian Columns Plate VI, Owen Jones

Figure 2
Barcelona Pavilion, Mies van de Rohe, 1928.

Materiality became the ornament with Modernism. Mies van der Rohe used stone, chrome, glass and water as the expression of beauty with a sculpture of Dawn.

whenever any style of ornament commands universal admiration, it will always be found to be in accordance with the laws which regulate the distribution of form in nature."[4] Such instances could include literal depictions of natural elements, most commonly flora, but animal and human forms are to be found as well; abstractions of natural elements; and geometric repetitions that follow mathematical proportions based on those found in nature. Ornament, Jones wrote, could be of three kinds: "that which is constructive, or forming part of the monument inself, of which it is the outward and graceful covering of the skeleton within; that which is representative but at the same time conventionally rendered; and that which is simply decorative."[5] This goes to say that ornament can take the form of carving on a column or a relief on a wall or a painting. All fall under the category of ornamentation.

translated from the procedures and processes of construction into symbolic imagery [ornament] - Semper

a waste of labour and time, unless it is a crafted object for the aristocratic, which then is only relevant when it is done for the personal satisfaction of the craftsperson - Loos

Semper spent a significant amount of time simply studying objects of so called ornament and beauty. It was after thorough analysis of these objects that his definition of ornament began to form. As ornament so often was something applied to another surface, object, thing, etc., for example a wall or floor covering to a structure, he believed that ornament must be directly tied to its origins relating to architectural

4. Owen Jones, *The Grammar of Ornament,* (New Jersey: Princeton University Press, 2016), 19.
5. Ibid, 49.

process and building construction.[6] He often referred to the comparison of clothing to the body as cladding [decoration] to architecture. This is in the sense that the style, weather a person's clothing relating to their style or the style of ornament relating to the architecture that it is being applied to, always related back to that which it is being applied to.[7]

The meaning of ornament is difficult to dicuss, then, if it instinctively means different things to different people.

Loos in many ways agreed with the ideas of Semper but then proceeded to build off of his research and conclusions. In his famous book Ornament and Crime, which was written at the start of the Modernist period, he particularly believed that ornament was wasted labour and in turn wasted heath, time, material, etc.[8] This in turn would greatly hinder the technological evolution of humankind that the Industrial Revolution brought. Loos did however imply that ornamentation was necessary, but only for the benefit of the craftsman; that it is the duty of the aristocrats to allow craftsmen the opportunity to create a beautiful well made item.[9] This iconoclastic mentality was at the forefront of Modernist thinking, and continues to be seen in contemporary design today, though under a new title: minimalism.

a decorative element of any scale that embodies signification - Frascari and Picon

As seen above, there are multiple definitions of ornament, mainly because no single person can definitively quantify it in terms of scale, or describe its meaning. Regarding the first issue – scale – Marco Frascari boldly states in his essay, The Tell-The Tale-The Detail, that it simply cannot be concretely defined. He illustrates this idea by listing examples such as the tectonics in wall assembly, columns and even whole structures like a lantern on top of a dome.[10] All are decorative elements, no matter their scale, when considered in relation to a whole. For example, columns can be ornaments when considered in relation to a temple, just as a complex and beautiful wood joint can be ornamental when in relation to a wall system. It should be noted, however, that while each of these examples can be considered as ornament, each is made up of smaller ornamental parts. For instance, the column can be broken down into the base, the shaft and the capital, each with their own decorative style.

Signification is a much more subjective issue, one that, according to Antoine Picon, has not been greatly explored. In her book Ornament: The Politics of Architecture and Subjectivity, she likens ornament to music in that is pre-subjective; it inspires an emotional response and an opinionated mindset before it is consciously thought about.[11] The meaning of ornament is difficult to discuss, then, if it instinctively means different things to different people. What can conclusively be said is that good ornamentation should have meaning attributed to it, and not simply be suck on as superficial embellishment. Frascari agrees on this point, writing that "...the detail expresses the process of signification; that is, the attaching of meanings to man-made objects."[12] Thus the definition of ornament is an ambiguous and/or multifaceted subject, where every theorist in every time period will have differing ideas based on the style of the era and their own personal opinions on the matter.

Cover Image
Aalto, Alvar. "Sketches of Nordic House." n.d. Photograph. Accessed from The Nordic House: Alvar Aalto (1999), pg 21.

Figure 1
"Skylight" n.a. n.d. Photograph. Accessed from The Nordic House: Alvar Aalto (1999).

Figure 2
Haðarson, Hörður. "Geometries of Seltjarnarneskirkja." 1980. Drawing.

6. Jörg H. Gleiter, *Ornament Today,* (Bozen-Bolzano University Press, 2012), 32.
7. Ibid, 33.
8. Adolf Loos, *Ornament and Crime,* trans. Micheal Mitchel, (Riverside CA: Ariadne Press, 1997), 171.
9. Ibid, 175.
10. Marco Frascari, "The Tell-The Tale-The Detail", in *VIA 7: The Building of Architecture,* (1987), 24.
11. Antoine Picon, *Ornament,* (Chichester: John Wiley & Sons Ltd, 2013), 142.
12. Marco Frascari, "The Tell-The Tale-The Detail", in *VIA 7: The Building of Architecture,* (1987), 23.

Al Bahr Tower, Aedas Architects, 2012.

"To work our way towards a shared language once again, we must first learn how to discover patterns which are deep, and capable of generating life."

-Christopher Alexander, *A Pattern Language*

Pattern

by : Bryce Jaekel & Taylor McGee

Pattern *(n)*

/ˈpadərn/

A repeated sequence or recognizable trait associated with like objects or actions.

French:
Motif
Modèle
Patron

Latin:
Patronus

Theorists
D'Arcy Wentworth Thompson
Christopher Alexander

The Oxford dictionary's online database defines ***pattern*** as a noun meaning, "*A repeating decorative design, an arrangement or sequence regularly found in comparable objects, or a regular and intelligible form or sequence discernible in certain actions or situations.*"[1] Another definition specifying auditory and pragmatic uses of the term such as; *"a drawing or shape that you use when you are making something, so that you get the shape and size correct, and in linguistics, the words, phrases, groups, and clauses that are regularly associated with a particular verb, noun, or adjective."*[2]

Historically the word comes from Old English as well as Latin origin. In Old English the word root *Patron*, an adaptation of the Latin term *Patronus* meaning defender, advocate, or spokesman, means 'a model to be imitated' where we can see the connection to its current definition.[3] In French the word ***pattern*** translates a number of ways linking it to both its current definition as well as its prior English and Latin roots. For instance the french word *modèle* is a translation of pattern synonymous with the english words for design, template or style implying a more visual or aesthetic definition.[4] However, another interpretation of the word's french definition comes from the french word *motif* which can be interpreted in english to also mean a reason, or cause linking it to its more pragmatic english use in that it speaks to identifiable and practicable traits geared toward a desired result, like a technique.[5] Finally, the French word

1. Lexico.com. 2019. *Definition of Pattern in English.* https://www.lexico.com/en/definition/pattern (accessed September 23, 2019)
2. Macmillan Dictionary Blog. 2017. *Word of the day: Pattern.* http://www.macmillandictionaryblog.com/pattern (accessed September 23, 2019)
3. Ibid.
4. Google Translate. 2019. *Pattern- Modele.* https://translate.google.com/#view=home&op=translate&sl=en&tl=fr&text=Pattern (accessed September 26. 2019)
5. Google Translate. 2019. *Pattern- Motif.* https://translate.google.com/#view=home&op=translate&sl=en&tl=fr&text=Pattern (accessed September 26. 2019)

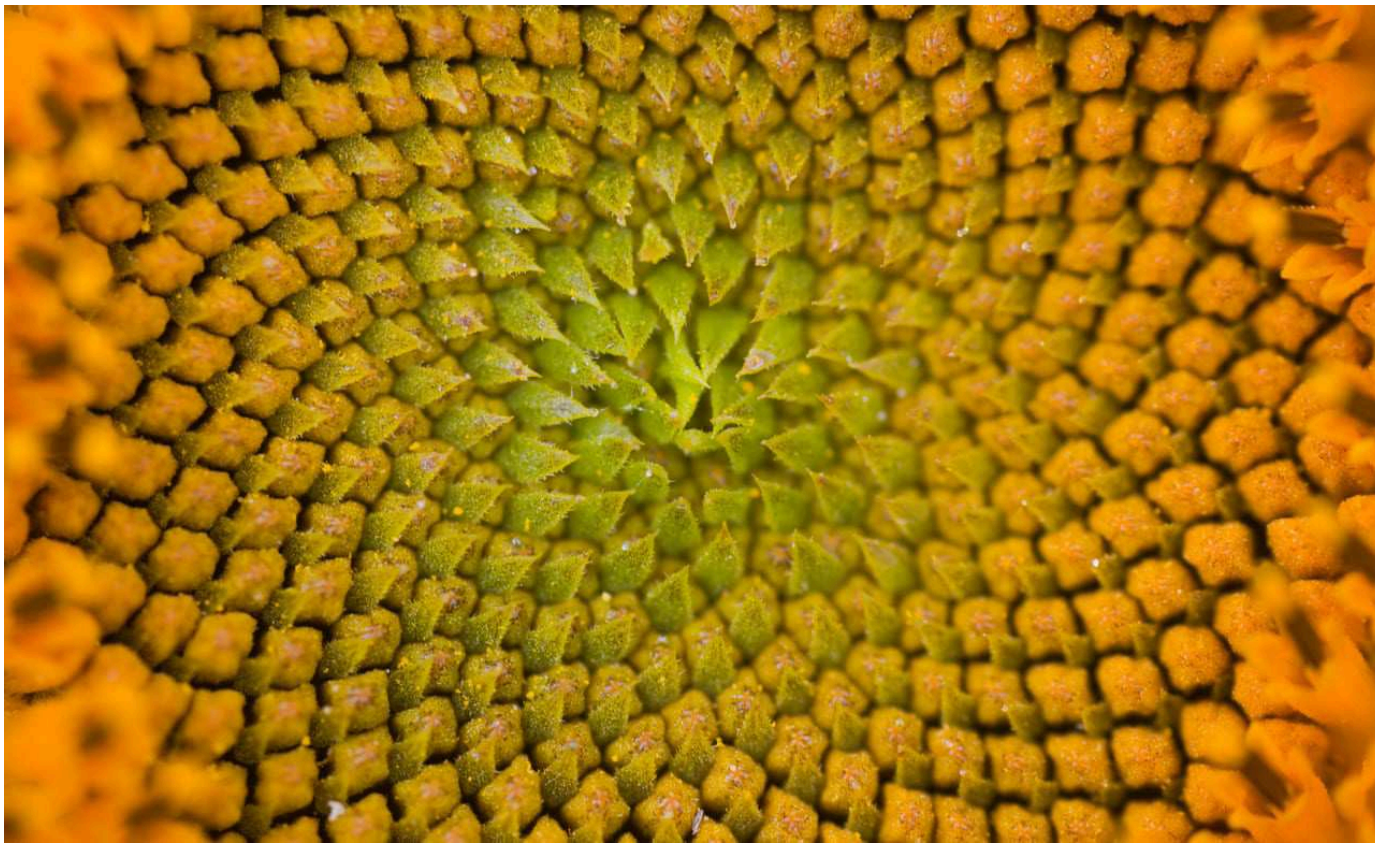
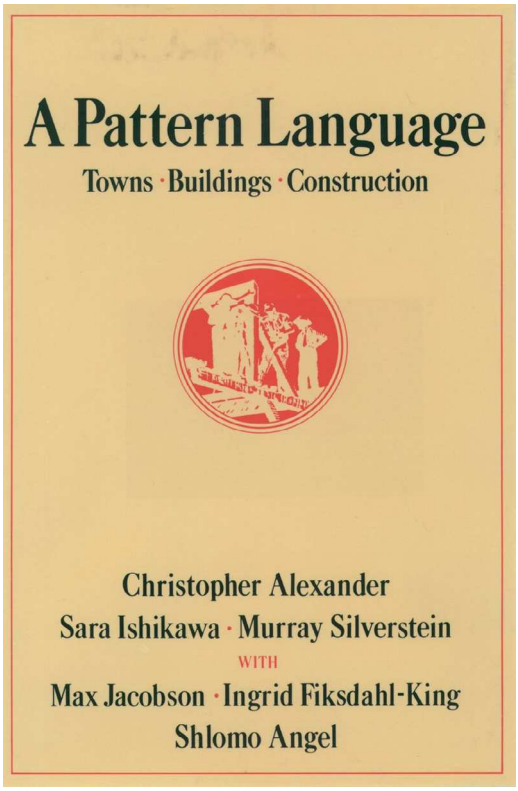


Figure 1: Photo by Christopher Alexander (Radial symmetry in plants)



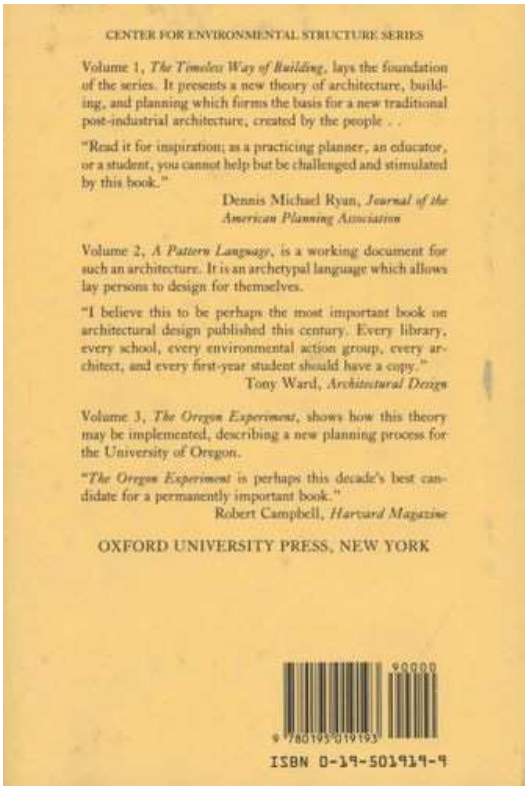


Figure 2: Christopher Alexander. "A Pattern Language: Towns, Buildings, Construction."

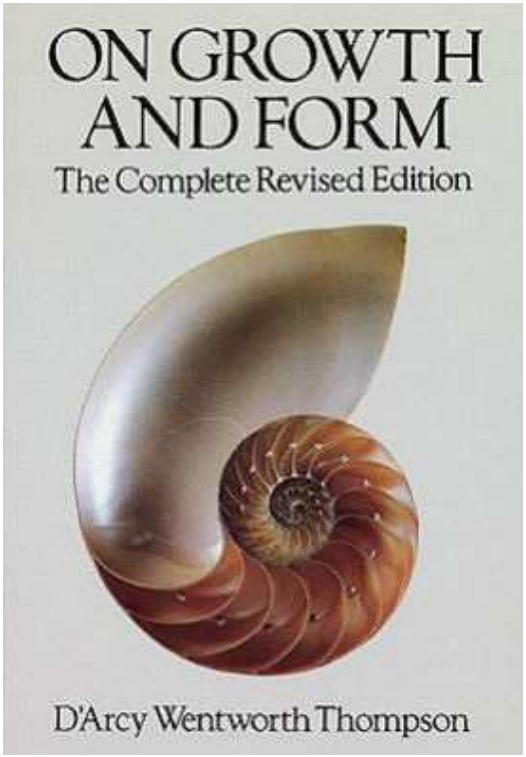


Figure 3
Image by D'Arcy Wentworth Thompson, Accessed September 2019

Illustrating Thompson's observations of natural spirals in nature such as the formations of shells, horns and plants to which he associates the mathematics of the logarithmic spiral to their biological formations.

patron is another synonym for pattern this one meaning boss, employer or master speaks to the Latin root of the word being associated with a desirable individual whose characteristics one should aspire toward.[1]

Pattern theory, formulated by Ulf Grenander, is a mathematical formalism used to describe knowledge of the world as patterns.[2] This notion of rationalising knowledge of the world through patterns was introduced by the works of Darwin Thompson, specifically that of his published work 'On Growth and Form' in 1917 which pioneered the use of mathematics in biology.[3] Darwin sought to explain biological phenomena through the employment of physics and mathematics to determine the form and structure of living organisms as an alternative to evolutionary concepts.[4] Producing concepts of scientific growth patterns to explain and justify the inherent connections between organism growth and their resulting forms, pointing out that all changes of form are a phenomena of growth.[5] Such patterns are expressed through Darwin's analysis of the logarithmic spiral which can be found throughout nature from shells to horns as demonstrated in Figure 3 [6]; arrangements of leaves and other plant parts as demonstrated in Figure 1; revolutionary shapes of hollow structures found in natural objects such as eggs; and mechanical efficiency being derived from natural structures such as wood and bone materials.[7] Thompson's analysis of patterns in the natural world ultimately lead to a systematic critique of structure. This search for rationalization in the relationship between form and function influenced the works of Christopher Alexander. Alexander, similarly utilized biological systems, or rather the technology of life, to inform sets of patterns that guide and restructure

1.Google Translate. 2019. *Pattern- Patron.* https://translate.google.com/#view=home&op=translate&sl=en&tl=fr&text=Pattern (accessed September 26. 2019)
2. 2007. Ulf Grenander and Michael Miller. *Pattern Theory: From Representation to Inference.* Oxford University Press. Paperback. (ISBN 9780199297061)
3. Thompson, D'Arcy Wentworth. *ON GROWTH AND FORM.* First Editioned. Cambridge University Press, 1917.
4.Ibid.
5. Ibid.
6. Collections, St Andrews Special. "'On Growth and Form' and Mathematical Biology." Echoes from the Vault, September 18, 2017. https://standrewsrarebooks.wordpress.com/2017/08/22/on-growth-and-form-and-mathematical-biology/.
7. Thompson, D'Arcy Wentworth. *ON GROWTH AND FORM.* Second Editioned. Cambridge University Press, 1942.

relationships within our environments. This critique of current approaches to designing and the making of things implies the importance of designing with context.[8] This was showcased in his earlier work 'Notes on the Synthesis of Form' (1964), where he presents an entirely new theory on the process of design through rational thought where new structures, physical orders, organization, and form are designed in response to function.[9] Likewise in his 1985 book 'The Production of Houses' The importance of designing with an understanding of vernacular patterns as well as social implications can be the difference between comfortable living spaces and disconnected residences.[10] This is further explored in, 'Pattern Language: Towns, Buildings, Construction' (1977) a book comprised of 253 various patterns. These short guides describe how to solve design problems, using a 'pattern language' that can be utilized as a tool to efficiently and sustainably control the built environment.[11]

"The term pattern can be interpreted in architectural theory as an understanding of processes, relationships, and behaviours and their correlation to the built environment."

The term pattern and its presence in architectural theory is evident in the employment of design models such as parametric design and biomimicry. Parametric design utilizes mathematical parameters to inform and manipulate the relationships between elements to create an algorithm that can inform complex geometries and structures.[12] Biomimicry is the imitation of biological entities, geometries, and systems to inform the design and production of materials, structures and systems.[13] When both design models are integrated into a cohesive design approach, complex geometries and forms can be produced through algorithmic parameters to achieve smart architectures and systems that are intuitive with surrounding environments. This can be perfectly exemplified by the world's largest computerized dynamic and responsive facade design on the Al Bahr Towers located in Abu Dhabi. Designed by Aedas Architects, the two towers feature innovative facade shading systems inspired by traditional vernacular architecture of the Middle East, parametric computer computation, and biomimicry.[14] Taking cultural cues from the "mashrabiya", a traditional Islamic lattice shading device, while incorporating the adaptive behaviours of natural organisms to the changing location of the sun and weather conditions; the design team utilized computer aided technologies to produce a parametric description for the geometry of the acuted facade panels to achieve a shading system that responded to sun exposure and frequency of angle changes during the different days of the year.[15] As illustrated in Figure 1, the shading devices utilized on the Al Bahr towers perfectly demonstrates how patterns can inform, inspire and manifest themselves into architectural translations producing more responsive, sustainable, and proficient designs.

Patterns and their application within architectural theory have been tools to better understand the complexities of biological systems and their applications in design. Allowing the integration of natural systems into architectural design with technological precision, integrating technology with nature, can enhance the built environment's performance.

Cover Image
"AL BAHR TOWERS." AHR. Accessed October 1, 2019. https://www.ahr.co.uk/Al-Bahr-Towers.

Figure 1
Rose, Steven. "Growth and Form by D'Arcy Wentworth Thompson Review – Centenary of a Darwin-Challenging Classic." The Guardian. Guardian News and Media, July 21, 2017. https://www.theguardian.com/books/2017/jul/21/growth-form-darcy-wentworth-thompson-review.

Figure 2
"The Al Bahar Towers: Shading, The Real Envelope." IGS, October 11, 2017. http://igsmag.com/market-trends/super-tall-buildings/the-al-bahar-towers-shading-the-real-envelope/.

Figure 3
D'Arcy Wentworh Thompson. Accessed September 29, 2019. Drawing.

8. "A Pattern Language Explained." Permaculture magazine, January 2, 2016. https://www.permaculture.co.uk/articles/pattern-language-explained.
9. Alexander, Christopher. *NOTES ON THE SYNTHESIS OF FORM.* United States: Harvard University Press, 1964.
10. Alexander, Christopher. *The Production of Houses.* United States: Oxford University Press, 1985.
11. Alexander, Christopher, Sara Ishikawa, and Murray Silverstein. *A Pattern Language: Towns, Buildings, Construction.* Oxford University Press, 1977.
12. Jabi, Wassim (2013). Parametric Design for Architecture. London: Laurence King. ISBN 9781780673141.
13. Vincent, Julian F. V.; et al. (22 August 2006). "Biomimetics: its practice and theory". Journal of the Royal Society Interface. 3 (9): 471–482. doi:10.1098/rsif.2006.0127.
14. "AL BAHR TOWERS." AHR. Accessed September 30, 2019. https://www.ahr.co.uk/Al-Bahr-Towers.
15. Cilento, Karen. "Al Bahar Towers Responsive Facade / Aedas." ArchDaily. ArchDaily, September 5, 2012. https://www.archdaily.com/270592/al-bahar-towers-responsive-facade-aedas.

Churchita, Supersudaka / Juan Pablo Corvalán & Gabriel Vergara, 2009

"Places are often described by the geological but in reality it means something more than location, between the earth and the sky is the world, and the world is mortals dwelling, the 'inside' is the place made by man, we cannot have an inside without relating it to the outside, 'outside' is the naturally made place"[2].

Place

by : Alisha Bishop & Holly Sutton

Place *(n)*

/pleys/

"a particular portion of space, whether of definite or indefinite extent."[2]

Latin:
'Platea'

Greek:
'Plateia

Theorists
Jeff Malpas
Christian Norberg-Schulz
Gaston Bachlard
Martin Heidegger
Maurice Merleau-Ponty
Ronal Lee Fleming
Yi-fu Tuan
Setha Low

The term place finds its roots in the Greek 'Plateia' and the Latin 'Plata', which refer to open space or broadway. According to Jeff Malpas in his book Place and Experience: A Philisophcical Topography this can be interpreted as "a certain open, if bounded, space and region". [3] This can help us to understand the distinction between the word 'place' and its cousin 'space'. "Space is the contianter in which things are, and place is the things that are within the container."[4] Place has boundaries, phenomenological lines that distinguish the difference between one place and another. It's these characters of 'place' that we form connections with and shape who we are as people.

The work of architect C.N-Schulz brings forth the notion of genius loci as a relevant term to understand the idea of place; "Genius loci is a roman concept, genius is the independent guardian spirit of each being. Spirit gives life to people and places and determines their character or essence. Genius denotes what a thing is or what it wants to be. The ancient man experienced his environment based on its definitive characters, survival depended on man understanding and working with the character of the place in which he presides in the physical and psychic sense".[5] The lessons from Anishinabee culture convey the same ideas, as people, animals and objects in the world have an essence that can teach us lessons.[6] Place is made up of different collections of beings that have different essences that influence each other.

1. Norberg-Schulz, Christian. Genius Loci: towards a Phenomenology of Architecture. New York: Rizzoli, 1996.
2. "Place." Dictionary.com. Dictionary.com. Accessed September 30, 2019. https://www.dictionary.com/browse/place.
3. Malpas, Jeff. Place and Experience: a Philosophical Topography. Cambridge, U.K.: Cambridge University Press, 1999.
4. Ibid.
5. Norberg-Schulz, Christian. Genius Loci: towards a Phenomenology of Architecture. New York: Rizzoli, 1996.
6. Will Morin

Figure 1 McEwen School of Achitecture, LGA Architectural Partners, 2018

Figure 2
Church(ita), Supersudaka, 2009

this holds more meaning than 'I am an architect' ".[7] C. N-Schulz argues that place influences a persons identity, where as an occupation does not. "Human identity presupposes the identity of place, identification is the basis for mans sense of belonging, dwelling means to belong to a concrete place, the word dwell is derived from the old norse word to linger or remain, or the gothic word to be at peace, so to dwell is to be at peace within a protected place".[8] This leads to the understanding that people cannot exist without relating themselves to places, the place they were raised, the place they like to visit, they place where they dwell. Dwellings are buildings, and buildings are architecture. Hence, architecture is not the design of buildings, but rather the design of places that humans can relate themselves to.[9]

Understanding place means understanding memory, as the two are so closely linked. A place grows in the mind as it is filled with value which is gained from memory.[10] The average person might not value architecture in a way which would directly translate this to memory, and then to classify it internally as place, but "it is more often the remembrance of human interaction that helps us to claim it."[11] It is the interactions of people with spaces which creates a place, that raises questions related to placemaking. As a consequence, designers must look for ways in which architecture can encourage and strengthen the memories gained through spatial interaction.

Extending the resonance of a space through symbolism, materiality, and other sensory impressions can generate meaning for different people through an imaginative process, leaving "pegs for the imagination to hang on so that each generation can regenerate and reinterpret the meaning for their own time."[12] Sensory impressions within buildings are a way in which architects and designers enhance a physical locale into a place.

7. Ibid.
8. Ibid.
9. Ibid.
10. Fleming, Ronald Lee. The Art of Placemaking: Interpreting Community through Public Art and Urban Design. London: Merrell, 2007.
11. Ibid.
12. Ibid.

Looking at precedents with strong senses of place such as the McEwen School of Architecture in Sudbury, Ontario, we can see how the architects have used the history of the site in the materiality of the new build. The existing Telegraph Building was integrated into the design, tying the new build into the site by enhancing the characteristic presence and in turn creating a stronger sense of place. We can look at Fleming's analogy of the bare tree branch found in a salt mine to understand this better.[13] The branch is found covered in salt crystals clustered on the branch from the salt mine, the amount of time the branch has spent in contact with the mine has allowed the crystals to form, similar to the intensification of memory through spatial interaction. This concept is crucial to placemaking in architecture and design practices, capturing an ideal through the creation of material form which enriches the memory of a space into a place. Architecture is the vessel through which the mix of art and culture create placemaking, it is not only the acknowledgment and enhancement of character through craft, but the coming together of other disciplines which work hand in hand with architects that bring life to a place.[14] Locations can become places through a number of methods other than architecture, "rivalry or conflict with other places, visual prominence, and the evocative power of art, architecture, ceremonials and rites." [15] A multidisciplinary approach which focuses on cultural context of art, religion, and history provides the means to create strong metaphors of the true experience of a place. Projects which truly have a strong sense of place are those which weave the experience of the place through with metaphor, and have an enriched conceptual framework from working with the surrounding context. An example of a project which exemplifies an enriched sense of place through artistic and cultural knowledge is Churchita by Supersudaka, which utilized the mosaic skills of a local artist to enrich the historical significance of the art of mosaic within a struggling community. [16] The rich history of this slowly declining artform brought new life to the building, projects like these have "engaged the energies and ingenuity of artists and artisans across the country, enrich the narrative of place meaning."[17]

"A totality made up of concrete things having material substance, shape, texture and colour". [18] Think of the kitchen in a home, wood cabinets and stainless steel fridge, sun streaming in the window and laying upon the stone counters, apples in a bowl on the island, the smell of cooking on the stovetop being tended by a loved one. This is the totality of a kitchen as a place.

"A quantitative total of phenomenon which we cannot reduce to any of its properties, such as spatial relationships, without losing its concrete nature out of sight".[19]

Think of the kitchen again, if it was described only by its wooden cabinets, we would not understand the kitchen as a place. "We have used the word 'dwelling' to indicate the total man-place relationship. When man dwells, he is simultaneously located in space and exposed to a certain environmental character. The two psychological functions involved, may be called 'orientation' and 'identification'. To gain an existential foothold man has to be able to orientate himself; he had to know where he is. But he also has to identify himself with the environment, that is, he has to know how he is a certain place".[20] This relationship with place is essential to the cohabitation between people and places, it allows us to travel and then to return home, but it also helps us to understand how we need to survive in a place. The ability to analyze the character of the place (harsh or welcoming) allows people to make decisions on how to behave in different places.

Cover Image
Saieh, Nico. "Church(Ita) / Supersudaka." ArchDaily. ArchDaily, December 9, 2009. https://www.archdaily.com/41900/churchita-supersudaka.

Figure 1
Sagredo, Rayen. "McEwen School of Architecture / LGA Architectural Partners." ArchDaily. ArchDaily, June 3, 2018. https://www.archdaily.com/892818/mcewen-school-of-architecture-lga-architectural-partners?ad_source=search&ad_medium=search_result_all.

Figure 2
Saieh, Nico. "Church(Ita) / Supersudaka." ArchDaily. ArchDaily, December 9, 2009. https://www.archdaily.com/41900/churchita-supersudaka.

13. Ibid.
14. Tuan, Yi-fu. Space and Place: the Perspective of Experience. Minneapolis, MN: University of Minnesota Press, 2014.
15. Ibid.
16. Saieh, Nico. "Church(Ita) / Supersudaka." ArchDaily. ArchDaily, December 9, 2009. https://www.archdaily.com/41900/churchita-supersudaka.
17. Fleming, Ronald Lee. The Art of Placemaking: Interpreting Community through Public Art and Urban Design. London: Merrell, 2007.
18. Norberg-Schulz, Christian. Genius Loci: towards a Phenomenology of Architecture. New York: Rizzoli, 1996.
19. Ibid.
20. Ibid.

Learning From Las Vegas,(Lower Strip, looking north) Denise Scott Brown (1972)

"Symbol dominates space. Architecture is not enough. Because the spatial relationships are made by symbols more than by forms, architecture in this landscape becomes symbol in space rather than form in space. Architecture defines very} little: The big sign and the little building is the rule of Route 66."[1]

Post-Modernism

by : Trevor D'Orazio & Jacob Riehl

Post-Modernism *(n)*

/ˌpōs(t)ˈmädərnˌizəm/

In Western philosophy and culture, a late 20th-century movement characterized by broad skepticism, subjectivism, or relativism; a general suspicion of reason; and an acute sensitivity to the role of ideology in asserting and maintaining political and economic power.

French:
Post-Modernisme

Ojibwe
nanaapaazitam
(do opposite)

Theorists
Charles Jencks
Robert Venturi
Denise Scott Brown
Jean-François Lyotard
Steven Izenour

Post-Modernism is more than a perspective as it encompasses a viewpoint, a theory, a method, a style and an era within architectural history that aimed to counter Modernism.[2] It is commonly referred to as, "being any various movement in reaction to modernism that typically are characterized by a return to traditional materials and forms, as in architecture, or by ironic self-reference and absurdity, as in literature."[3] The ideology began as a movement in arts, sciences and philosophies before manifesting itself in architecture, initiating the global cultural movement.[4] Therefore, the following text defining Post-Modernism will be through an architectural lens to exemplify the theory's most permanent embodiment in society.

Beginning as a reaction to the original designs of Modernism, without grounded reasoning, Post-Modernism transitioned into a concept of pluralism and irony.[5] This pluralism creates the difficultly to distinguish the true beginning or end of the movement. It is then challenging to state that Post-Modernism symbolically began with the demolition of Pruitt-Igoe, a domineering Modernist social housing project.[6] While Modernism bulldozed the urban fabric and implemented many strategic urban renewal projects in the 50's and 60's, a rapid decline to the American city emerged, which influenced the end of the Modernist movement.[7] During this time they were devising ways, methods and understandings such as Jane Jacobs', Death and

1. David Unruh. *LEARNING FROM LAS VEGAS: THE FORGOTTEN SYMBOLISM OF ARCHITECTURAL FORM*,
Robert Venturi, Denise Scott Brown, and Steven Izenour, Cambridge, MA: MIT Press, 1977. Pg. 13
2. Charles Jencks. *The Story of Post-Modernism: Five Decades of the Ironic, Iconic and Critical Architecture.* Chichester: Wiley, 2011
3. "Postmodern." Merriam-Webster. Merriam-Webster. Accessed September 23, 2019. https://www.merriam-webster.com/dictionary/postmodern.
4. Charles Jencks. *The Story of Post-Modernism: Five Decades of the Ironic, Iconic and Critical Architecture.* Chichester: Wiley, 2011
5. Ibid
6. Ibid
7. Harry Francis Mallgrave, and David Goodman. *Introduction to Architectural Theory: 1968 to the Present.* Malden, MA: Wiley-Blackwell, 2012. pg.7

Figure 1 AT&T Building - 550 Madison Avenue, Philip Johnson and John Burgee (1984)

Figure 2
Vanna Venturi House, Robert Venturi, 1964.

The Vanna Venturi House was coined the very first Post-Modern building. It's "loud" communication can be understood through Mannerism, using historic, vernacular and exaggerated domesticity to develop a contradictory design that enables functional benefits. The final result of a "box of architectural tricks" aimed directly at making Modernism look "tired and dull".

Life of Great American Cities, to counter Modernism, formulating the foundation of Post-Modernism.[8]

Post-Modernism sought to counter the idea that rational thought could solve societal issues such as the Modernist ideology of unitary Functionalism.[9] Post-Modernists also believed that Modernism failed to respond to popular culture, requiring the reintroduction of stylistic subtlety and communicativeness back into mainstream design.[10] The use of ornament would allow buildings to recover the significance of the past in an aesthetically diverse way while also attending to their surroundings. The reintroduction of embellishment would become the notion of the "Decorated Shed", a term coined by Robert Venturi and Denise Scott Brown upon their visit to Las Vegas that stated how buildings could communicate their use through signage or independent ornamentation.[11] The opposite was coined the "Duck", a building that's purpose is manifested in its form. Incorporating multivalent, abstracted and playful techniques allowed Post-Modernist buildings to be designed as a language in themselves. The meanings exhibited through decoration put more emphasis on what a building said in contrast to the Modernist focus of what a building did.[12]

Early Post-Modernism can be best identified in Robert Venturi's Vanna Venturi House that incorporates ideas from his text, *Complexity and Contradiction in Architecture.*[13] The design incorporates elements of Modernism, like the homes' horizontal ribbon windows and plain rendered façade, but challenges their relationship. The design was inspired by Louis Khan's neighbouring Esherick House, yet set out to design a more relatable, contextual version using ornament and historical imagery to proclaim its vernacular identity. The form symbolizes a traditional American home with an exaggerated gabled roof, a centralized arched front

8. Ibid
9. Steven C. Bourassa. *Postmodernism in Architecture and Planning: What Kind of Style?* Journal of Architectural and Planning Research 6, no. 4 (1989): pg. 293. http://www.jstor.org.librweb.laurentian.ca/stable/43028934.
10. Charles Jencks. *The Story of Post-Modernism: Five Decades of the Ironic, Iconic and Critical Architecture.* Chichester: Wiley, 2011
11. Colin Davies. *A New History of Modern Architecture: Art Nouveau, the Beaux-Arts, Expressionism, Modernism, Constructivism, Art Deco, Classicism, Brutalism, Postmodernism, Neo-Rationalism, High Tech, Deconstructivism, Digital Futures.* London: Laurence King Publishing, 2018
12. Ibid, 315.
13. Ibid, 329.

entrance and a prominent, multi-purpose chimney mass that extrudes from a shed roof.[14] The irregular placement of windows at the front of the building contradicts the structures symmetry, playing tricks with the mind.[15] Though these architectural decisions created controversy at the time, the home became a source of influence and one that many came to appreciate.[16] The exaggerations, playfulness and architectural enquiry from Venturi's design all became prominent manifestations in the Post-Modernist movement.

Charles Jencks saw Post-Modernism as an opportunity for a more Radical-Eclecticism through the use of extreme simplicity and reduction of abstracted messages that could still be read by the locals in an unexpected way. He pointed this out by stating,

"... that eclectic systems, both in philosophy and architecture, didn't produce much of originality, nor confront key issues with any kind of tenacity... [making] eclecticism a kind of weak compromise... [that] combines contradictory materials in hope of avoiding a difficult choice, or seeing through a problem to a creative conclusion."[17]

Despite these intentions, many consider that early Post-Modernism failed to achieve its intent. The obscure designs created were referred to being illusionistic and poorly built, leaving many to misinterpret this new typology as unfamiliar and unclear.[18] Post-Modernism aimed to realign the importance of history through the medium of architecture. However, Post-Modernists' discredited the truth to materials, valuing aesthetics and intent over honesty and craftsmanship. This focus on message rather than quality failed to fill the cultural void that was left by Modernism. Instead, this multivalent, abstracted and playful style became as pervasive as Modernism itself.[19] Many could not tell what a Post-Modernist building wanted to be, establishing a contradiction to the initial reasoning. This caused the overstated typology of Post-Modernism to be seen as just imitating historical styles that no longer fit into the local context, rather than the Post-Modernist desire of a contextual and dialectical discussion in the vernacular context.

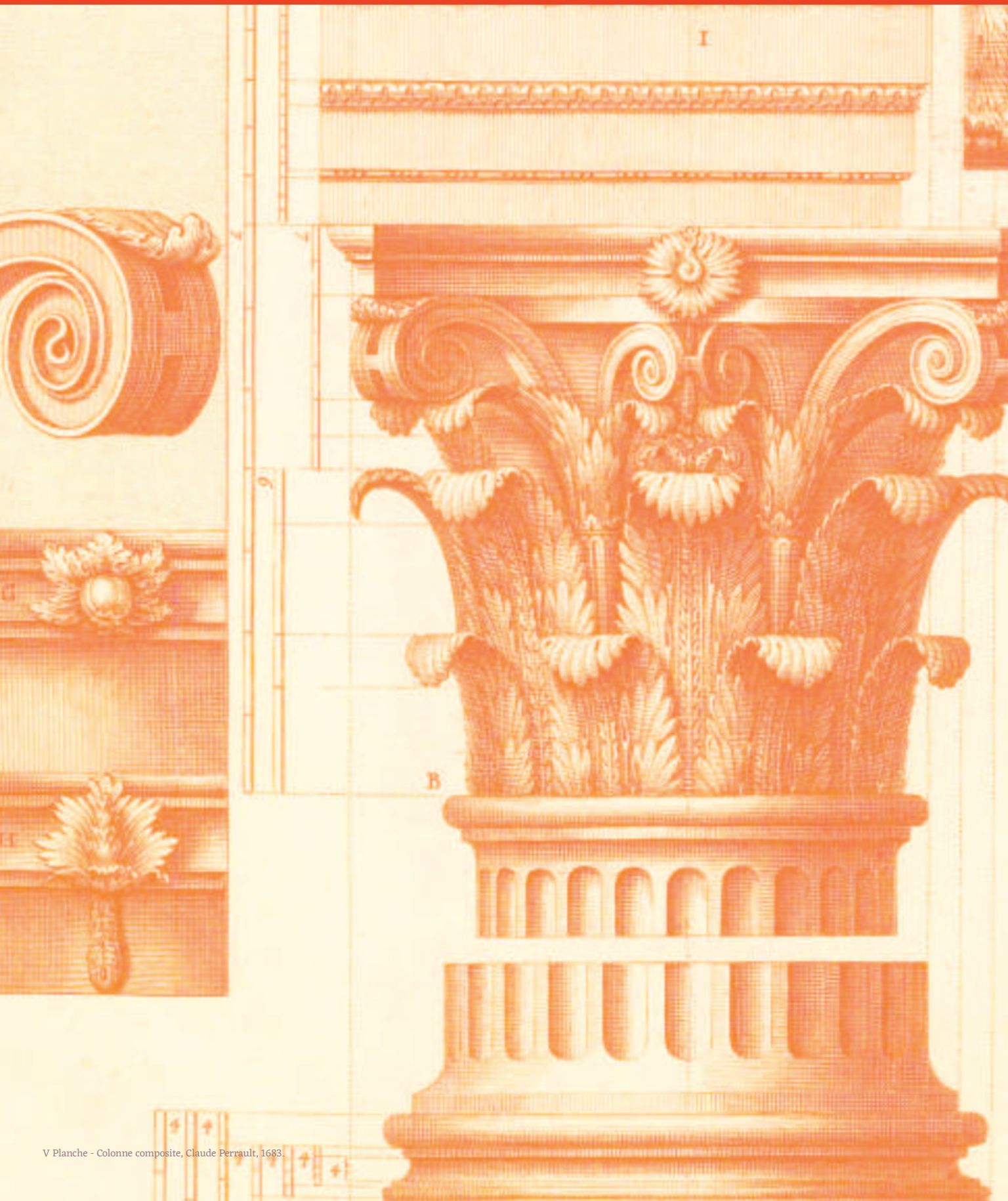
It can be understood that no architectural style will solve every issue due to the vast subjectivity of society. Since the introduction of Post-Modernism, the theory has evolved to include topics such as Neo-Rationalism and Deconstructivism, and influencing the contemporary outlook of practice. Current architecture maintains many values of Post-Modernist theory through more thoughtful techniques, focusing heavily on the process rather than pre-developed styles. From this, a more inter-disciplinary and inclusive field of design is emerging. Architecture cannot solely replicate history, but must develop ideologies in the social, political, economic and environmental contexts of its place. Thus, architecture is now less about the appearance and more about how people experience and relate to space, allowing the habitation of the building to come to life and define the message, creating meaningful and impactful architecture.

Cover Image
McKnight, Jenna. "Denise Scott Brown's Architecture Photographs on View in New York." Dezeen, November 19, 2018. https://www.dezeen.com/2018/11/15/denise-scott-brown-photographs-exhibition-carriage-trade-new-york/.

Figure 1
Gangar, Kunal, Anish, and Apurva. "Sony to Sell Its US Headquarters Building, Will Lease It Back." Tech Ticker, January 18, 2013. https://techtickerblog.com/2013/01/18/sony-headquarters-nyc-building/.

Figure 2
Perez, Adelyn. "AD Classics: Vanna Venturi House / Robert Venturi." ArchDaily, June 2, 2010. https://www.archdaily.com/62743/ad-classics-vanna-venturi-house-robert-venturi.

14. Amy Frearson. "Postmodernism: Vanna Venturi House by Robert Venturi." Dezeen, June 27, 2016. https://www.dezeen.com/2015/08/12/postmodernism-architecture-vanna-venturi-house-philadelphia-robert-venturi-denise-scott-brown/
15. Colin Davies. *A New History of Modern Architecture: Art Nouveau, the Beaux-Arts, Expressionism, Modernism, Constructivism, Art Deco, Classicism, Brutalism, Postmodernism, Neo-Rationalism, High Tech, Deconstructivism, Digital Futures.* London: Laurence King Publishing, 2018
16. Douglas Kahl. "Robert Venturi and His Contributions to Postmodern Architecture", Oshkosh Scholar, Vol 3 (April 2008): Pg. 60. https://minds.wisconsin.edu/handle/1793/28244
17. Charles Jencks. *The Language of Post-Modern Architecture.* New York: Rizzoli, 1991.
18. Hal Foster. *The Anti-Aesthetic: Essays on Post-Modern Culture* (Port Townsend, Washington: Bay Press, 1983). Pg. 9.
19. Colin Davies. *A New History of Modern Architecture: Art Nouveau, the Beaux-Arts, Expressionism, Modernism, Constructivism, Art Deco, Classicism, Brutalism, Postmodernism, Neo-Rationalism, High Tech, Deconstructivism, Digital Futures.* London: Laurence King Publishing, 2018. Pg. 314.



V Planche - Colonne composite, Claude Perrault, 1683.

"Beauty is produced by the pleasing appearance and good taste of the whole, and by the dimensions of all the parts being duly proportioned to each other." [1]

Proportion

by : Benoît Lachapelle & Devon Legge

Proportion *(n)*

/prəˈpôrSH(ə)n/

Ratios that compare one thing to another with connections relating to mathematics and arts.

Latin:
Proportio

French:
Proportion

Ojibwe
Inawem

Theorists
Vitruvius
Leon Battista Alberti
Andrea Palladio
François Blondel
Claude Perrault
Le Corbusier
P.H. Scholfield

The word *proportion* was derived from either Old French *proporcion* which translates to "measure, proportion" in the 13th century, or from the Latin word *proportio* which translates to "comparative relation, analogy" in the late fourteenth century. The Latin word *pro-portio* is constructed from the prefix *pro-* "for, before" and the ablative of *partio* "division" (originally borrowed from french parti "part, piece") , which further relates to Latin pars "a part, piece, a share, a division".

Throughout the centuries, the theory of proportion has evolved mainly because of the work of the Roman architect Vitruvius that wrote the "De Architectura", a series of treatises that explains Greek and roman architecture, inventions and their civilization. More specifically, through these books, he attempted to communicate proportion, symmetry, the perfect number and the human scale. Vitruvius established six principles for architecture : order, arrangement, proportion, symmetry, propriety, and economy. [2]

The treatises of Vitruvius were left unanalysed for hundreds of years, until the fifteenth century when the architects of the Renaissance discovered the work of Vitruvius due to the survival of various manuscripts that were copied by monasteries in the Middle Ages. [3] The printed copies and manuscripts were shared amongst scholars, architects and artists, which led to the emergence of proportion theories throughout

1. Vitruvius Polio, *Vitruvius : Ten Books on Architecture*, ed. Ingrid D Rowland and Thomas Noble Howe (Cambridge: Cambridge University Press, 2001).
2. Mark Wilson Jones, *Principles of Roman Architecture* (New Haven: Yale Univ. Press, 2009), 33-46.
3. Georgia Clarke, "Vitruvian Paradigms," Papers of the British School at Rome 70 (November 2002): 320, https://doi.org/10.1017/s0068246200002191.

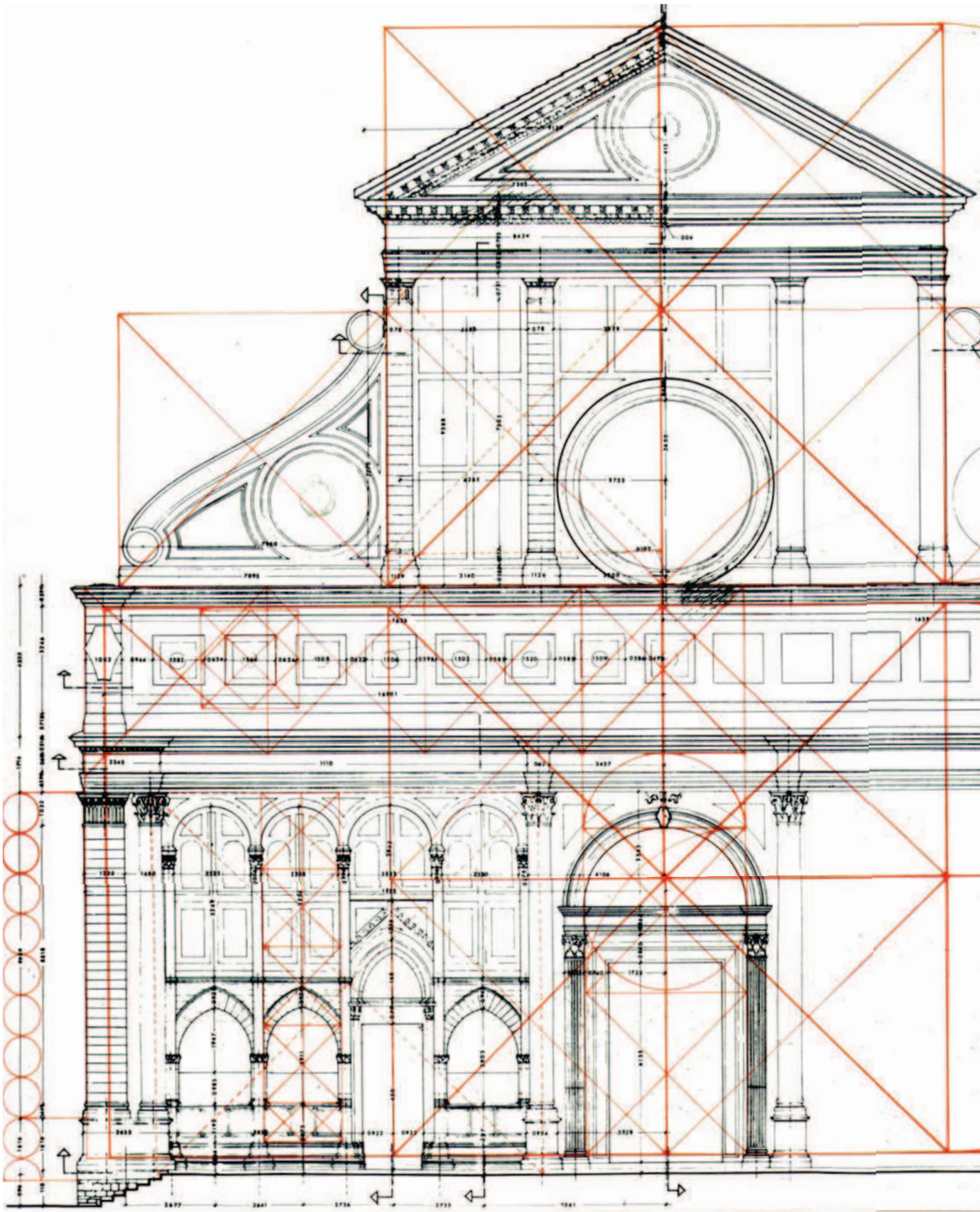


Figure 1 Geometrical proportions of the facade of the church of Santa Maria Novella, Leon Battista Alberti, 1450.

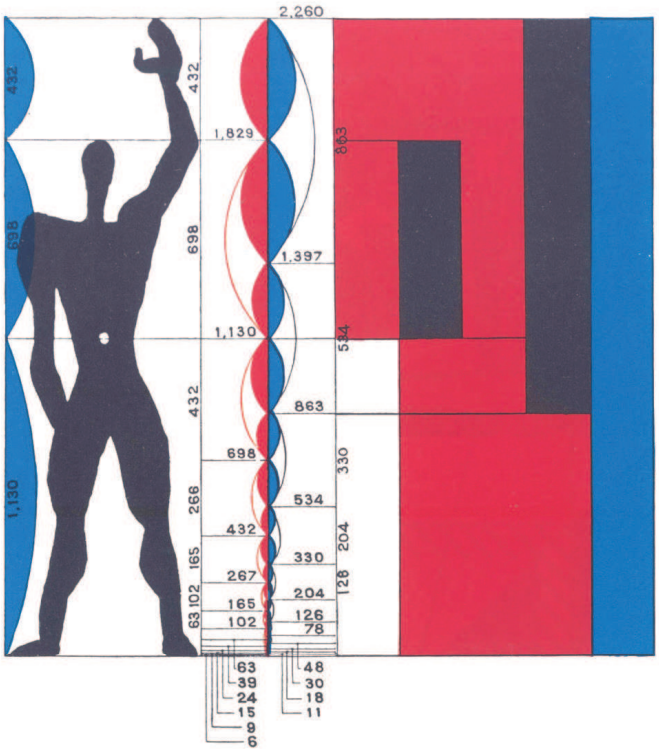


Figure 2
Modulor Man, Le Corbusier, 1945

the Renaissance. [4] For some theorists, the aesthetics principles were suggesting that proportion was a source of beauty that tried to invent rules and ratios that would govern aesthetics, while achieving the perfect sense of beauty. [5] The harmonic and arithmetic scales were also established by architects as a system of proportion. Alberti among others began looking at Greek architecture and analyzed the proportions of the Doric base through the lens of the arithmetic scales. [6] Renaissance writers were intrigued by the importance of the human scale in "De Architectura" [7], it led them to explore vastly the human scale theories in different ways, either following the Vitruvius scale of the human figure or by following a different height ratio that would be governed by the parts of the human body. [8] The numbers used in proportion theories during the Renaissance were solely commensurable proportion and ratios. But in Vitruvius's work, it clearly indicates that he was advocating for the use of the square root rectangle in various ways which put the work of the Renaissance in contradiction with itself because such root ratio are in fact incommensurable ratio. [9] The golden section and the square root of two were used because of their popularity and interest with mathematicians and architects even if it didn't follow Vitruvius advocacy. [10] Theories during this period of proportion gained a lot of criticism in the seventeenth century.

During the seventeenth century, two different visions of architecture and theory of proportion were defined; the beauty as mathematical harmony and related to value and quality. [11] The first group of architects were centred around the Royal Academy of Paris with his first director, Francois Blondel. They

4. Ibid, 320.
5. P H Schofield, *The Theory of Proportion in Architecture*. (London: Cambridge University Press, 1958), 37.
6. *Ibid*, 38.
7. Vitruvius Polio, *Vitruvius : Ten Books on Architecture*, ed. Ingrid D Rowland and Thomas Noble Howe (Cambridge: Cambridge University Press, 2001), 47.
8. Schofield,*The Theory of Proportion in Architecture*, 42.
9. *Ibid*, 50.
10. *Ibid.*
11. Matthew Cohen, "Introduction: Two Kinds of Proportion," *Architectural Histories* 2, no. 1 (June 20, 2014), https://doi.org/10.5334/ah.bv.

preferred the Renaissance theory of proportion for its value to beauty as being something universal and absolute, and more importantly they followed the harmonic theory of Alberti. [12]

Claude Perrault's translation of Vitruvius Ten books expresses a different vision than Blondel. In his treatise "Ordonnances des cinq espèces de colonnes selon la méthode des Anciens," he asserts that beauty is not a natural quality and it didn't depend on the laws of proportion nor on mathematical harmony. [13]

"I call beauties based on convincing reasons those whose presence in works is bound to please everyone, so easily apprehended are their value and quality. They include the richness of the materials, the size and magnificence of the building, the precision and cleanness of the execution, and symmetry, which in French signifies the kind of proportion that produces an unmistakable and striking beauty"[14]

The arbitrary beauty would contrast and relate to the wish of the architect to define proportion, shape and the form to have a building that appear agreeable by custom to everyone. [15] It is here, the first modern approach in the theories of proportion that allows the architect to take decision and have control of his building without acknowledging the ancient movement that Blondel idolized.

Following these evolutions in the theories of proportion and their implications in architecture, the conversation subsided. Ideas and theories of proportion did not maintain priority up until the 20th century. Throughout this period of time proportion was understood as a general design term; remaining in casual conversation regarding design and architecture.

In the twentieth century, conversation and extensive research on proportion was expanded upon by Swiss-French architect Le Corbusier. Le Corbusier concluded 20 years of research on proportion in 1945 with the development of his anthropometric scale of proportions known as The Modulor. [16] "The Modulor was meant as a universal system of proportions. The ambition was vast: it was devised to reconcile maths, the human form, architecture and beauty into a single system" [17] as opposed to the current metric and imperial systems in play. Although, the system gained criticism due to its replication of abandoned historical ideas on proportion theory. the Modulor system was not universally adopted due to the original proportional scales that centered on the perfect human form were dropped, having only notably been used by Le Corbusier in multiple projects.

In today's architecture proportional systems such as structural engineering specifications and urban building regulations are referred to as 'certainty-based proportional systems'. [18] Furthermore, computational design such as parametric modelling have allowed architects and designers high degrees of control over these certainty-based proportional systems; allowing architects and designers to solve increasingly complex design problems, custom fabrication, and construction while also exploring aesthetic expression. [19] Proportion continues to be an essential core concept to the idea and theory of architecture; evolving with current architectural movements into to the world of computational design.

Cover Image
Perrault, Claude. "V. Planche - colonne composite." 1683, pg 83. Drawing.

Figure 1
Geometrical proportions of the facade of the church of Santa Maria Novella, Leon Battista Alberti, 1450.

Figure 2
Le Corbusier. "Le Modulor." 1945. Drawing.

12. Matthew Cohen, "Introduction: Two Kinds of Proportion," *Architectural Histories* 2, no. 1 (June 20, 2014): 1–25, https://doi.org/10.5334/ah.bv.
13. Claude Perrault, *Ordonnance for Five Kinds of Columns after the Method of the Ancients*, trans. Indra Kagis McEwen (Santa Monica (CA): Getty Center For The History Of Art And The Humanities, 1993), 47.
14. *Ibid*, 50.
15. *Ibid*, 49.
16. Le Corbusier, Le Modulor (L'architecture d'aujourd'hui, 1950).
17. Will Wiles, "Modulor Man by Le Corbusier" (Iconeye, March 16, 2018), https://www.iconeye.com/opinion/icon-of-the-month/item/3815-modulor-man-by-le-corbusier.
18. Cohen, M., "Introduction: Two Kinds of Proportion", 15.
19. Ibid.

"The old lady's soul," Giulio Magnifico.

"Signs are crucial in understanding the enviornment and the complex discourse it entails."[1]

Semiotics

by : Marie Jankovich & Celina Rios-Nadeau

Semiotics *(n)*

/semiˈɒtɪks/

The study and process of meaning-making and the interpretation of signs.

French:
Sémiotique

Ojibwe:
Babaamiwizh - "guide"

Greek:
Sēmeiōtikós - "observant of signs"

Theorists
Ferdinand de Saussure
Charles Sanders Pierce
Umberto Eco
Pierre Boudon

In the postmodern era, architecture was viewed as a visual language of "linguistic analogy" which questioned the existence of "social contracts", advanced by the influence of Marxist theories and linguist Ferdinand de Saussure.[2] Applied to the contemporary study of signs, semioticians interpret signs in a collective 'sign-system', regarding the creation of meanings and their representations in reality.[3] Semiotics can be understood as an approach in understanding meaning.

In semiotics, signs are comprised of four main components: signifier, signified, and their connotations and denotations.[4] Signifier is the suggestion of a word, gesture, image, sound, or pattern that refers to a meaning or sign.[5] Signified is the interpretation of what is suggested or expressed by the signifier.[6] The suggestion can then be interpreted in two forms, through feelings, ideas and cultural associations called connotation, or the literal or primary meaning intended called denotation.[7] In other words, denotation is what we actually see and connotation is the association with the image.

When applied to architecture, Umberto Eco often recognizes the *sign* as denotative, since it is primarily functional and not viewed as communicative.[8] Despite the fact that *function* occupies a prominent role in a building, architecture allows a fluctuation between occupying spaces in a specific way, while allowing the user to occupy the space as *they see fit* through

1. Richard Coyne, *Network Nature: The Place of Nature in the Digital Age*, (Bloomsbury Visual, 2018), 8.
2. Kate Nesbitt, ed., "Semiotics and Structuralism: The Question of Signification," in *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*, (New York: Princeton Architectural Press, 1996), 110.
3. Daniel Chandler, *Semiotics: The Basics*, 1rst ed. (Routledge, 2002), 2.
4. Ibid., 38.
5. Ibid.
6. Kate Nesbitt, ed., "Semiotics and Structuralism: The Question of Signification," in *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*, (New York: Princeton Architectural Press, 1996), 111.
7. Daniel Chandler, *Semiotics: The Basics*, 1rst ed. (Routledge, 2002), 38.
8. Neil Leach, ed., "Function and Sign: The Semiotics of Architecture," in *Rethinking Architecture: A reader in cultural theory*, (Routledge, 1997), 181.
9. Ibid., 196.

Figure 1 "Slice of life"

Figure 2

Through semiotic mechanisms, the cave not only symbolizes shelter but includes other connotative symbolic functions based on one's experience of understanding and interpreting the cave.

their individual interpretations.[9] As a result, buildings manifest a language of architectural signs, affected by interpretations and associations, which inform users of the intended uses of the building.

Within semiotics, there are several branches which comprehend 'sign systems' with differing methods, yet each define the significance of *function* and *interpretation* within societies. Semiotics argues that signs are not data, and that data filters how we perceive the world.[10] To understand the signs in the environment is crucial because they deliver valued meaning to our lives.[11] Coherent with the work of Charles Sanders Pierce, there is a human-nature relationship in which natural systems are inherently used separately from human language.[12] Since processes of signification are biologically linked to human cognitive processes, semiotics allows for interpretive understanding.

On the contrary, semiotics can also be viewed as the study of signs which are learnt by experience through observation, or the conditioned reflex.[13] In this case, the interpretive understanding is primarily based on one's own experience in how they relate to the sign. However, external conditions like natural events, biological needs, or demographic factors, generate responses to this symbolic scheme, with conditions that can cause reformulation.[14] Where a portion of a population develops an association between the symbolic scheme and diverse conditions, which re-establishes a more collective understanding, and thus designating 'a culture'.[15] With signs having such an influence on our perceptions, it becomes imperative to recognize cultural sign systems and its application towards architecture.

Culture can be considered as a 'supra-language', a language which communicates in a more expressive or

10. Richard Coyne, *Network Nature: The Place of Nature in the Digital Age*, (Bloomsbury Visual, 2018), viii.
11. Ibid., ix.
12. Ibid., 6.
13. Irene Portis Winner, ed., "Saussure/Pierce à propos Language, Society and Culture" in *Semiotics of Culture* (The Hague: Mouton, 1979), 97.
14. Ibid., 83.
15. Ibid.
16. Irene Portis Winner, ed., "Saussure/Pierce à propos Language, Society and Culture" in *Semiotics of Culture* (The Hague: Mouton, 1979), 107.
17. Neil Leach, ed., "Function and Sign: The Semiotics of Architecture," in *Rethinking Architecture: A reader in cultural theory*, (Routledge, 1997), 198.
18. Richard Coyne, *Network Nature: The Place of Nature in the Digital Age*, (Bloomsbury Visual, 2018), 43.

intuitive manner than a typical language.[16] Semiotics as a result is integral to the cultural conventions which govern communicative exchange.[17] In societies where data is interpreted by machine metaphors, there is a detachment from the natural semiotic process.[18] With perceptions heavily influenced by data, there is risk of denotation, in how architecture is conceived and expressed. Furthermore, culture becomes stagnant as the increased reliance on data reduces meaning and value towards the built environment.

Cultural semiotics recognizes that people live in social systems, where their lives are directed towards meaningful values and images.[19] According to Umberto Eco, cultures can, for instance, be identified by their use and application of definitive materials, acting as a symbolic scheme and *cultural unit*.[20] For architecture, how a building manifests or transmits these symbolic schemes become crucial to how society perceives or recognizes culture. Since forms cannot be functional without the supportive processes of codification, an understanding of cultural semiotics is required for the creation of meaningful design.[21]

In order for the semiotic process to be brought into architecture, the architecture needs to connote an ideology of its function.[22] In the case of a cave, its initial function may have been for shelter, but through its use for providing security and group gatherings, the cave brought about a symbolic function that signifies 'security' or 'group'.[23] Through this semiotic mechanism the cave establishes meaning and value that is rooted by the reformulation of its function, evolving into one that is symbolic and cultural. Hence, if the symbolic connotation recognizes the denoted function's relevance to society, architecture has the potential to carry cultural meaning.

Culture in architecture is frequently misrepresented in society as machines, with a definite function and no means for interpretation; except this notion is inaccurate, as culture does not function solely on data.[24] In order to avoid misrepresentations of culture as machines, the associations that allow for the interpretation and understanding of architectural design, cannot be disassociated from the literal intention or function. Cultural meaning of the architecture is just as significant, if not more important than its function. Beyond the primary function of an object, when viewed from a societal perspective, the object's symbolic capacities are no less useful than their functional capacities.[25] Architecture's communicative functions frame for social utility and cultural identity through the understanding of cultural semiotics.

"Like it or not, all buildings symbolize, or at least 'carry' meaning"[26]

If buildings carry meaning, it should be understood how they carry meaning in order to comprehend how to design them better. Without cultural meaning, architecture would not maintain its ability to be processed and understood through different perspectives that contribute to the evolution of architecture. Often throughout history, both connotative and denotative functions undergo loss, recoveries and substitutions.[27] Where societal reconstructions are able to duly interpret architecture by re-connecting through culture. In architecture, "semiotics shows us the possibility of systems of signs where planes of expression and content are not inseparable," or at least where they can be more successfully separated.[28] In order to construct social realities reflective on cultural values, the study of semiotics is critical in the understanding of the mediating roles of signs, and the roles played by ourselves and others.[29]

Cover Image
Magnifico, Giulio. "The old lady's soul." Photograph. 2014. Accessed from https://www.flickr.com/photos/isonic/.

Figure 1
Nobili, Daniela. "Slice of Life". Photograph. 2010. Accessed from https://www.flickr.com/photos/danielanobili/.

Figure 2
"Pembrokeshire." Photograph. 2012. Accessed from https://www.flickr.com/photos/jazzerton/.

19. Irene Portis Winner, ed., "Saussure/Pierce à propos Language, Society and Culture" in *Semiotics of Culture* (The Hague: Mouton, 1979), 83.
20. Ibid.
21. Neil Leach, ed., "Function and Sign: The Semiotics of Architecture," in *Rethinking Architecture: A reader in cultural theory*, (Routledge, 1997), 186.
22. Ibid., 187.
23. Ibid.
24. Irene Portis Winner, ed., "Saussure/Pierce à propos Language, Society and Culture" in *Semiotics of Culture* (The Hague: Mouton, 1979), 85-86.
25. Neil Leach, ed., "Function and Sign: The Semiotics of Architecture," in *Rethinking Architecture: A reader in cultural theory*, (Routledge, 1997), 187.
26. Kate Nesbitt, ed., "Semiotics and Structuralism: The Question of Signification," in *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*, (New York: Princeton Architectural Press, 1996), 125.
27. Neil Leach, ed., "Function and Sign: The Semiotics of Architecture," in *Rethinking Architecture: A reader in cultural theory*, (Routledge, 1997), 190.
28. Ibid., 198.
29. Daniel Chandler, *Semiotics: The Basics*, 1rst ed. (Routledge, 2002), 14.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"Contemporary research on the social construction of space often focuses on the inscription, contestation, and the politics of race, class, gender, sexual orientation, age, ability, and other social categories."[1]

Spatial Politics

by: Ra'anaa Brown & Keegan McGowan

Spatial Politics *(n)*

/ˈspāSHəl päləˌtiks/

Spatial politics refers to the sometimes physical or metaphorical division or classification of space contingent upon a series of determining factors such as class, race, gender, sexual orientation, religion/faith, age, ability, etc.

French:
Politiques Spatiales

Ojibwe
Dawaa - Dibaakonige

Theorists
Henri Lefebvre
Setha Low

Space, and place; have always been socially constructed by the people which inhabit them. Place is unique to each users reality, they can include cultural, historical, religious, and local constructions; all which enact different social, and spatial politics. [1] Spatial politics are not specific to a location but that in which the users are using the built or natural form; as politics are both enacted within and outside the architectural dialog. Public spaces, in specific spaces which can be accessed by all can provide opportunities for spatial manipulation.[2] Urban outdoor spaces are typically transient for the common user, whereas for others these are the spaces in which they live. These public spaces can reveal social hierarchies, and policies enacted within different subgroups in a city. Religious, political, social, and other groups will utilize each space..

Gentrified Spaces: Presenting a major challenge to traditional residential theories, gentrified spaces inherently redevelop lower-class or otherwise undesirable spaces, into ones that are highly sought-after and of high economic value. In terms of spatial politics, the transformation of these previously working class (or vacant) areas into upper and middle-class areas, or into that of commercial use, is one of the largest debated urban issues the world is facing.[3]

1. Rodman, Maragaret"Empowering Place: Multilocality and Multivocality." American Anthro-pologis 94, no. 3 (1992): 640–656.
2. Stewart, Lynn. "Bodies, Visions, and Spatial Politics: a Review Essay on Henri Lefebvre's The Production of Space." Environment and Planning I): Society and Space 13 (1995): 609–18.
3. Lees, Loretta, Tom Slater, and Elvin Wyly. Gentrification . New York: Taylor & Francis Group, 2008.
4. Magali Sarfatti Larson, "Architectural Competitions as Discursive Events," Theory and Society 23, no. 4 (1994).

"Them" n.a. n.d. Photograph. Accessed from Sober Night: Justin Yoon (2018).

Figure 2

This images denotes the gentrification and urbanization of previous low income areas.

Coined by Ruth Glass in the mid-1960's, this now global epidemic raises questions about its interrelations with globalisation as well as its manifestation as a new form of urban colonialism.[5] Used to describe the change in social structure and the housing markets of London, England, the gentrification of space was initially defined as a complex process by which physical improvement of the housing tenure changed from renting to owning comprised with a raise in price and the displacement of the working class population.[6]

Racialized Spaces: Racialized space is defined as that which is prohibited to, or solely designed for a particular ethnic group. Although "racial identity is spatialized and informed by experience..."[7], the creation and frequency of racialized spaces showcase an ongoing global issue of architecture and urbanism as a tool for segregation. Theorist George Lipsitz believes that within racialized space lies the value of experience and throughout the lived experience of race lies an aspect of spatial dimension.[8] Whereas there have been documented instances of racial thriving in these spaces, there have been numerous cases in which racialized spaces has paved the way to the creation of disenfranchised, crime ridden and sometimes under-developed communities. Dating back centuries, the creation and progression of racialized spacehas been attributed to a sense of classicism, hierarchy and undoubtedly racism.

Sexualized Spaces: Sexualized spaces are not inherently connected to the architecture nor to the design of the space. It is instead intrinsically linked to the bodies which inhabit them; by appropriating the design the user is able to use the space to attain their sexual goals; whether it be

5. Atkinson, Rowland, and Gary Bridge. Gentrification in a Global Context: the New Urban Colonialism. London: Routledge, 2005.
6. Hamnett, Chris. "Gentrification and the Middle-Class Remaking of Inner London, 1961-2001." Urban Studies 40, no. 12 (November 2003): 2401–26. https://doi.org/10.1080/0042098032000136138.
7. Gooden, Mario. Dark Space- Architecture, Representation, Black Identity. Gsapp Books, 2016.
8. Magali Sarfatti Larson, "Architectural Competitions as Discursive Events," Theory and Society 23, no. 4 (1994).
9. Lipsitz, George. "The Racialization of Space and the Spatialization of Race: Theorizing the Hidden Architecture of Landscape." Landscape Journal 26, no. 1 (2007): 10-23.

for personal aesthetic and ritual, enjoyment, is pleasure driven, or performance voyeurism.[10] These homogenous designs allow for a varied range of examples, such as the domestic home, bars, baths, and urban contexts. Sexualized spaces, although not directly linked to architecture are inherently policed by their own sets of spatial policies. As an example, the modern bath is not ingrained throughout history as being homosexual but within these spaces sexual policy is enacted. In society same-sex erotocism must remain inarticulate, therein "closeted" as male intimacy has multi-dimensional enactments of tensions wihin baths. [11]These policies are in place for safety and in order to state boundaries within these spaces where the senses are heightened.

Gendered Space: By examining both masculine and feminine theorists, studies have been able to access the definition of these terms at particular moments and places throughout time; while continually emphasizing the inherent connection to the public and private realm of these two categories. Gender theory; which studies the commonly recognized static separation of oppositional binary of gender- male and female; does not fully define gendered spaces.[12] Gendered spaces are then areas in which gender specific grouping may be observed and gather. Such spaces can be religious, public, private, outdoor, etc. Gendered spaces are policed by their own sets of policies in regards to whom is using the space; male or female.

Spatial Politics are thus enacted in a variety of places due to systemic social constructs. Across time and locations spaces are continuously sexualized, racialized, gendered, gentrified and more as a means to segregate and often empower varying communities.

"Space is not a scientific object removed from ideology or politics. It has always been political and strategic. There is an ideology of space. Because space, which seems homogeneous, which appears as a whole in its objectivity, in its pure form, such as we determine it, is a social product."

- Henri Lefebvre

Figure 1
"Them" n.a. n.d. Photograph. Accessed from Sober Night: Justin Yoon (2018).

Figure 2
"Consumption, Gentrification, and You" n.a. n.d. Photograph. Accessed from: NewDream. Josmar Torres (2018).

10.Potvin, John, "Vapour and Steam: The Victoria Turkish Bath, Homosocial Health, and Male Bodies on Display" Journal of Design Theory, Vol. 18 no. 4 (Winter, 2005), pp. 319-333
11. Kornhaber, Spencer. "Cruising in the Age of Consent." The Atlantic, July 2019 96-10
12. Zita, Jacquelyn N., Body Talk: Philosophical Reflections on Sex and Gender (Between men- Between women), New York: Columbia University Press, 1998

Gando primary School designed by Francis Kéré.

"The wide range of definitions of sustainability makes the term a fertile ground for misappropriation of its principles, which include environmental efficiency, social equity, cultural diversity, and environmental viability."[1]

Sustainability

Logics of Sustainable Architecture

By : Shayne Bol & Adam Petit

Logics of Sustainable Architecture

Sustainability *(n)*

/ˈläjik/əv/ səˈstānəb(ə)l/ˈärkəˌtek(t)SHər/

Sustainability: Of, relating to, or being a method of harvesting or using a resources so that the resource is not depleted or permanently damaged[2].

Architectural Sustainability: A term that counters a capitalistic economy, advocating for health, conservation and prosperity of forthcoming generations above all, utilizing an interdisciplinary approach.

French:
Durabilité [architecturale]

Ojibwe[3]:
Bimaadiziwin

German[4]:
Nachhaltigeit

Theorists:
Hans Carl von Carlowitz
Carmela Cucuzzella
Graham Farmer
Simon Guy

Understanding a term like sustainability, so grounded in relativity, guides our imagination towards a utopian world in light of its optimistic, yet grim actuality. Valid throughout almost any discourse, sustainability looks to uphold a standard of living that will never deplete resources for future generations. The concept of sustainability has saturated the current discourse so much that a firm understanding of its epistemology is difficult to grasp. While the concept of sustainable development in contemporary architecture is relatively new, sustainability has been something that has been practiced for centuries[5].

The term sustainability first emanated from a German Saxon mining administrator and forestry expert, Hans Carl von Carlowitz, in the 18th century[6]. The term 'Nachhaltigeit' was used in a treatise written by Carlowitz, discussing the consumption of timber resources. In an effort to convey that the forestry industry should only harvest what it could replenish[7], Carlowitz observed that people must operate within limits, or else resources would become depleted and ecosystems damaged. Unfortunately, his concept was paralleled with industrialization and economic growth. As a result, industries were deregulated which allowed non-sustainable practices to take place. Consequently, anthropogenic environments grew exponentially, touching on how interconnected the environment, economy and social well-being truly are.

1. Cucuzzella, Carmela. "Is Sustainability Reorienting the Visual Expression of Architecture?" RACAR: Revue D'art Canadienne / Canadian Art Review 40, no. 2 (2015): 86-100. http://www.jstor.org.librweb.laurentian.ca/stable/43632234.
2. "Definition of SUSTAINABILITY." Accessed September 30, 2019. https://www.merriam-webster.com/dictionary/sustainability.
3. "The Ojibwe People's Dictionary." The Ojibwe People's Dictionary. Accessed September 22, 2019. https://ojibwe.lib.umn.edu/.
4. Schmithüsen, Franz. "Working Papers International Series: Three Hundred Years of Applied Sustainability in Forestry." ETH Zurich, 2013.
5. Jeremy L. Caradonna. Sustainability: A History. Illustrated. Oxford University Press, 2014.
6. Ibid.
7. Schmithüsen, Franz. "Working Papers International Series: Three Hundred Years of Applied Sustainability in Forestry." ETH Zurich, 2013.

Figure 1 Tree House by: ADDP Architects. Example of explicit aesthetic logic.

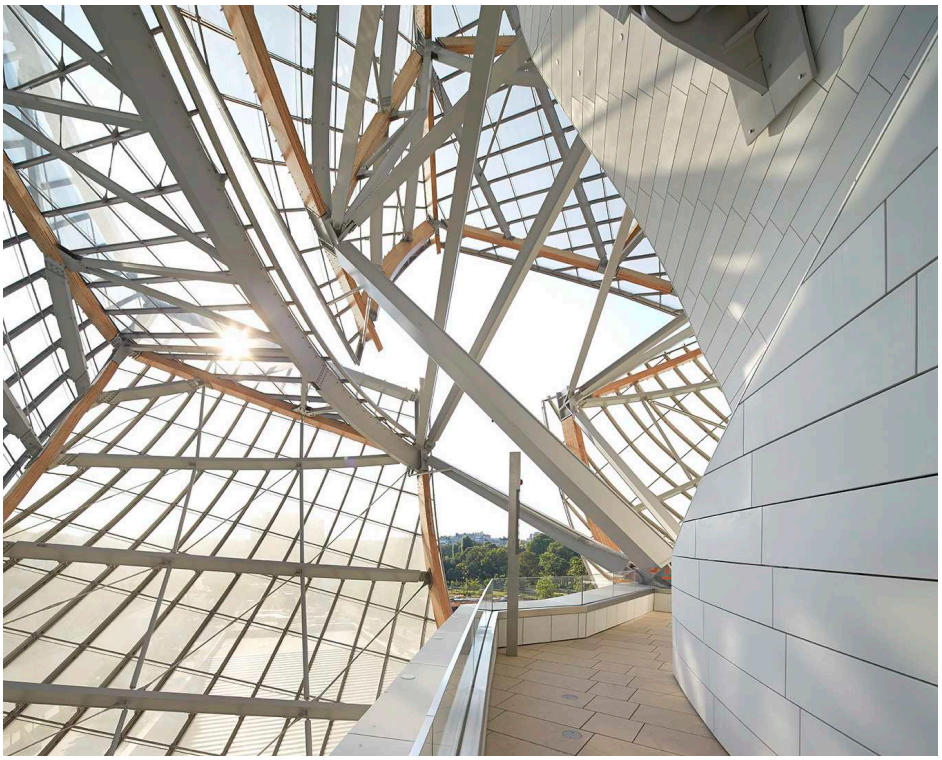


Figure 2
The Edge By PLP Architecture. Netherlands. 2015. " The World's Greenest office building", is an example of smart logic to sustainability. Although the buildings aesthetic does not appear to be what most people associate with sustainable architecture, it uses technology in order to be very efficient and conservative resources, making it an extremly sustainable building.

By the turn of the 20th century, sustainable movements speaking to conservationism, internationalism, social justice and many others, were brought together under the uniform call for "sustainable development"[8]. The 1972 United Nations Conference on Human Environment in Stockholm, Sweden recognized the importance of environmental management by means of environmental impact assessment and other management tools[9]. Today, 17 Sustainable Development Goals have been introduced to encourage best-known practices, focusing on topics pertaining to poverty, food solidarity, clean energy, industry and infrastructural practices[10]. Unified by environmental stewardship, sustainability presents itself as a solution worthy of its inclusiveness and interdisciplinary nature. Unfortunately, the misuse of 'sustainable' certification systems' negatively impacts the perception of sustainability due to its ambiguity. Today, certification systems such as Leed, Breeam and Green Globes act as distributors of "certified sustainable" buildings. As a result, architects often find themselves competing for points on a checklist that mitigate environmental consequences instead of pursuing logical strategies that prioritize regenerative principles[11]. Architectural sustainability's etymology reveals a term that counters a capitalistic economy, advocating for health, conservation and prosperity of forthcoming generations.

"Understanding a term like sustainability, so grounded in relativity, guides our imagination towards that of a utopian world in light of its optimistic, yet grim actuality."

Sustainability should be looked at more holistically than is often the case. Within "Contested

8. Jeremy L. Caradonna. Sustainability: A History. Illustrated. Oxford University Press, 2014.
9. Mebratu, Desta. "SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT: HISTORICAL AND CONCEPTUAL REVIEW," n.d., 28.
10. "Home .:. Sustainable Development Knowledge Platform." Accessed September 29, 2019. https://sustainabledevelopment.un.org/#.
11. Yudelson, Jerry. Reinventing Green Building: Why Certification Systems Aren't Working and What We Can Do About It. New Society Publishers, 2016.

Constructions: The competing logics of green buildings and ethic" Simon Guy and Graham Farmer identify six logics that offer a more thorough understanding of what is architectural sustainability means today[12].

Ecological Logic: The ecological logic is focused on reducing the ecological footprint of buildings[13]. Strategies emphasize the reuse and recycling of materials, and reducing dependency on infrastructure. Architects will often draw comparisons from ecology, employing a closed-loop process, rather than an open-loop process.

Smart Logic: Smart logic believes that technology can provide solutions to environmental issues, and focuses on quantitative data such as energy consumption[14]. The technology does not always express sustainable strategies explicitly, and can be subtle. This logic can be seen in the Edge building (figure 2), classified as the world's greenest office building; the building uses technology to be extremely efficient, although it does not adhere to the prototypical aesthetic of what sustainable architecture is.

Aesthetic Logic: Aesthetic logic can be presented visibly or non-visibly, and looks at how to represent sustainability in architecture. Unfortunately, this logic has been misunderstood as what sustainable architecture is to the general public (figure 1). As a result, too many buildings are now greenwashed and appear to be sustainable, while not functioning as a sustainable building. Aesthetic logic is not about green roofs/walls, but should be used to inspire people's desire to connect with nature, while encouraging sustainable practices.

Symbolic Logic: Symbolic logic addresses environmental and cultural concerns, and believes sustainability needs to focus on place, looking at traditional knowledge and building methods which exemplify how cultures adapt to a particular environment[13]. Without truly understanding a place, and its culture, this logic believes that any attempt to establish a more sustainable environment fails.
Comfort Logic: Comfort logic is focused on how the built environment impacts health. This logic is concerned with the idea of "sick buildings", and strive for better control over building environments. This not only includes internal environments, but larger topics such as environmental pollution as well. By linking health to issues such as the quality of air, water and urban space; this logic can be applied to a larger scope of issues[14].

Community Logic: Community logic addresses the issue of sovereignty and designs that embody a community. They often incorporate the community into the design process, allowing them to feel a sense of accountability. A great example of this logic is the Gando primary School designed by Francis Kéré (see cover image). Throughout the project Kéré engaged the community by making them feel a part of the project. Local materials were used throughout the design and locals were trained on how to build the school itself. This approach empowered the community, while educating them on building techniques. As a result, sustainable architecture within this lens can be seen as a social process that requires the full participation of its beneficiaries[15] .

Understanding these logics and their relation to sustainability's contemporary discourse, architectural logics to sustainability are derived from environmental, social and economic processes. Misappropriation of the term has revealed the importance of a cross-disciplinary approach, emphasizing the correlation between sustainability and other fields, in order to achieve authentic sustainable development into the future.

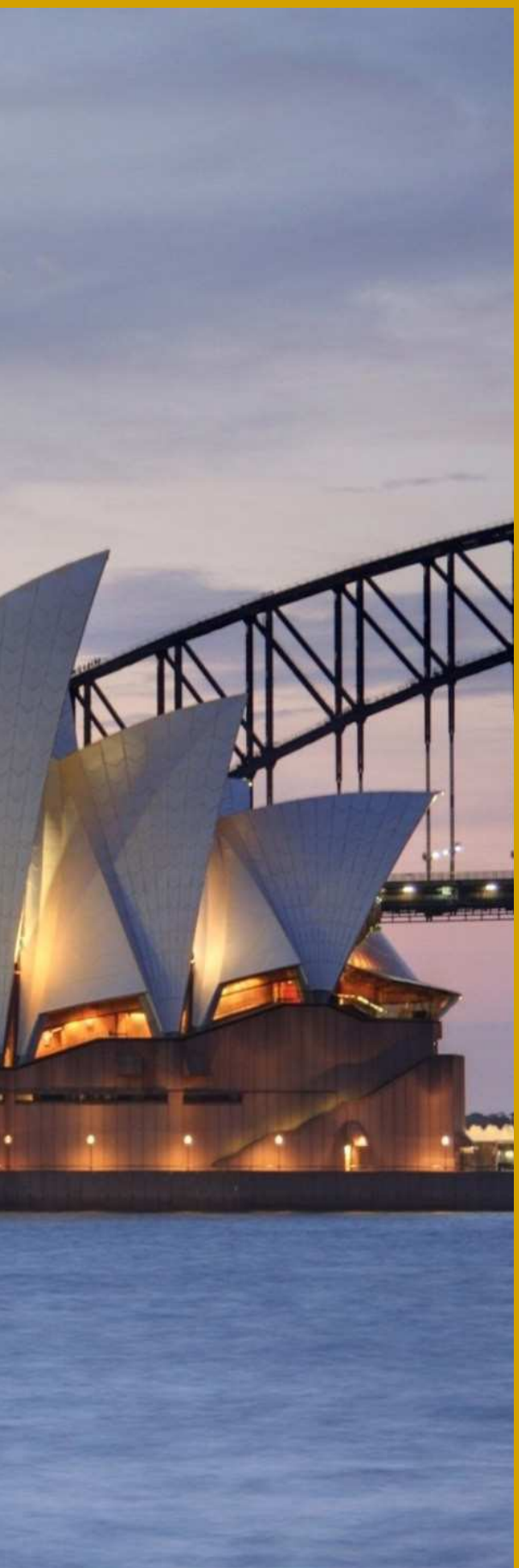
Cover Image
Kéré, Francis. Gando Primary School. October 17, 2017. Photograph. http://archinew.altervista.org/2017/10/17/diebedo-francis-kere-says-school-that-launched-his-career-is-not-a-traditional-african-building/.

Figure 1
The Treehouse. Photograph. Singapore. Accessed September 22, 2019. https://www.virgin.com/travel/green-streets-how-plantlife-is-inspiring-modern-architecture.

Figure 2
The Edge Building. Photograph. Amsterdam. Accessed September 22, 2019. https://www.lifegate.com/people/lifestyle/the-edge-amsterdam-most-sustainable-building.

12. Guy, Simon, and Graham Farmer. "Contested Constructions: The Competing Logics of Green Buildings and Ethics." Ethics and the Built Environment, January 1, 2001, 73–87.
13. Pearson, D. (1991) 'Making Sense of Architecture', The Architectural Review 1136: 68–70
14. Guy, Simon, and Graham Farmer. "Contested Constructions: The Competing Logics of Green Buildings and Ethics." Ethics and the Built Environment, January 1, 2001, 73–87.
15. ibid
16. ibid
17. Clarke, T. (1992) 'Building for Sustainability', Institute of Advanced Architectural Studies Report, University of York.

Sydney Opera House, Jørn Utzon, 1973



"Architecture is an art because it is interested not only in the original need for shelter but also in putting together, spaces and materials, in a meaningful manner. This occurs through formal and actual joints. The joint, that is the fertile detail, is the place where both the construction and the construing of architecture takes place."[1]

Technology

by : Prabhjit Brar & Jordan Feldberg

Technology *(n)*

/ tek-ˈnä-lə-jē /

The practical application of knowledge through the use of tools, devices and methods to manipulate matter, energy and information.

French:
La technologie

Ojibwe:
Anokaajigan
Gikendaasowin

Greek:
tekhnologia

Theorists
Albert Borgmann
Aristotle
Étienne-Louis Boulée
Galileo Galilei
Gilbert Simondon
Gilles Deleuze
Kenneth Frampton
Martin Heidegger
René Descartes
Vittorio Gregotti

The term technology is derived from two Greek terms, techne and logos. Techne is defined as the manner in which something is achieved. The manner could be an art, skill, craft or an action. Logos simply means a word, a term used to dictate a thought.[2] By putting them together, technology becomes a noun used to describe the discourse on the acquirement of things.[3] Technology can be understood as the knowledge gained through creation, also known as tacit knowledge and empirical experience. This knowledge can only be learned through doing and observing and cannot be learned solely through theory. Design and technology are united through conception of architecture through the knowledge of construction, context and environmental issues.[4]

As Aristotle said in his doctrine, technology is characterized as a form of knowledge that guides the fabrication of human identity. Aristotle believed that we as humans are encoded to continually fabricate (poiesis) something to fulfil our legacies. Nonetheless, Galileo thought that technical needs need to be explored through experimentation and learning from nature. Everything we need to learn and the knowledge we have acquired has come from nature. Descartes affirms we should seek to understand nature as did the expert craftsman understand the products of his craft: to know something means knowing how it can be fabricated. However two thousand years later, Heidegger believed that with the

1. Kenneth Frampton, "The Case For the Tectonic" in *Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory 1965-1995 (New York: Princeton Architectural Press, 2008),* 526.
2. Andrew Feenberg "What is Philosophy of Technology?," In Defining Technological Literacy, ed Dakers J.R. (Palgrave Macmillian, New York, 2006).
3. Vittorio Gregotti, "Introduction" in *Architecture, Means and Ends*, (Chicago: The University of Chicago Press, 2010), 2.
4. Andrew Feenberg "What is Philosophy of Technology?," In Defining Technological Literacy, ed Dakers J.R. (Palgrave Macmillian, New York, 2006), 5.

Figure 1 Supertree Grove, Singapore

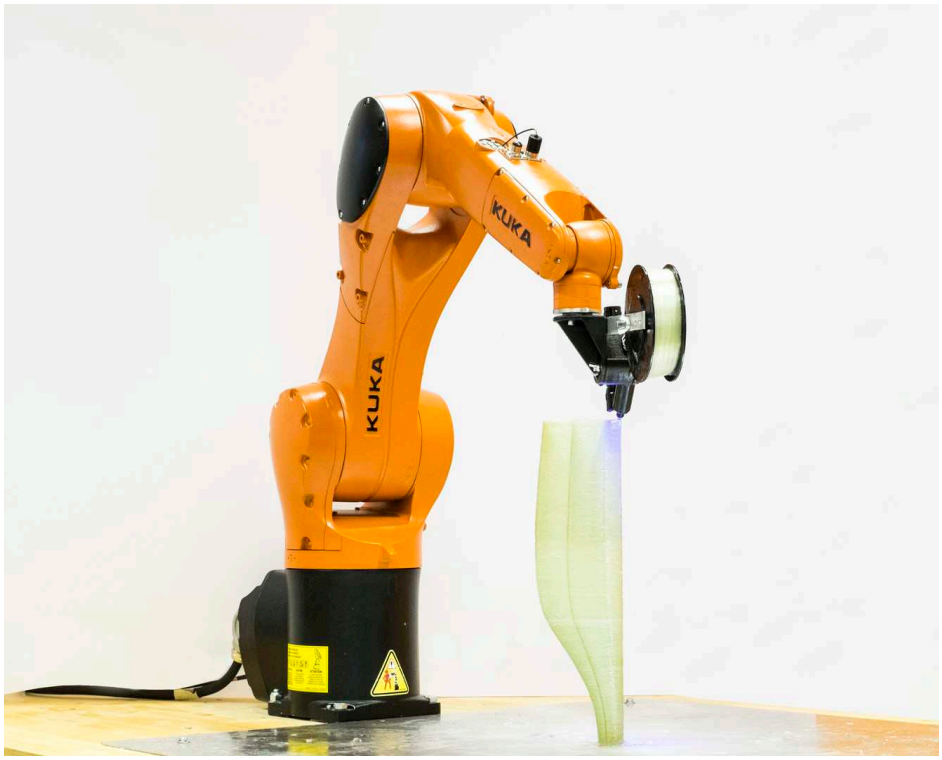


Figure 2
6 Axis Robot Arm, Politecnico di Milano , 2017.

Additive manufacturing using fiberglass composites with a 6-axis robot arm.

advent of modern science all forms of knowledge have come under the domination of the technical model of knowledge.[5] Science looks at techniques from nature and how are we able to reproduce what nature produces so effortlessly. How can we produce something from nature and still recognize and identify it as coming from nature which is what Heidegger is speculating.[6]

As defined by Étienne-Louis Boulée, architecture is the production of the mind, a creation with an emphasis on the imagination.[7] Furthermore, in the organization of technic, the technological object is used by Frampton to describe something derived from the meeting of an instrumental need.[8] Architectural theory is derived from principles of creativity that enable exchange between the built environment and the domain of knowledge.[9] Another way to look at it is through science, a correlation between abstract knowledge and practice.[10] An architect's intent would be to not exert power but be the arbitrator between nature and the existing world. They are simply recognizing the creative potential of what is already there and what could be produced.[11] Over the course of the last two centuries, architects have largely become technocrats, professionals that process the flow of data and guide the assembly of complex technical constructions. Technological advancements have made work flow easier through the aperture of network information flow leading to greater possibilities such as computational modeling and robotics. Ivan Illich describes architecture and technology as, "the tools of design and construction, have become a matter of systems."[12]

According to Vittoria Gregotti, technic can be broken down into three categories: one involving

5. Gernot Böhme, *Invasive Technification: Critical Essays in the Philosophy of Technology* (London: Bloomsbury Academic, 2012), 14.
6. Ibid, 13.
7. Antoine Picon, "Architecture, Science, Technology and the Virtual Realm" in *Architecture and the Sciences: Exchanging Metaphors* (New York: Princeton Architectural Press, 2003), 297.
8. Kenneth Frampton, "The Case For the Tectonic" in *Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory 1965-1995 (New York: Princeton Architectural Press, 2008),* 521.
9. Ibid, 296.
10. Ibid, 300.
11.Antoine Picon, "Architecture, Science, Technology and the Virtual Realm" in *Architecture and the Sciences: Exchanging Metaphors* (New York: Princeton Architectural Press, 2003), 307.
12. William W. Braham, Jonathan A. Hale, and John Stanislav. Sadar, "Introduction" in *Rethinking Technology: a Reader in Architectural Theory* (London: Routledge, Taylor & Francis Group, 2007), xii- xiv.

materials, second, involving organization, and third morphological questions.[13] The material group refers to practice, the concept of learning through experience and gaining of skills. Organizational matters refer to the techniques used to produce an infrastructure where the outcomes are specific aims and possibilities. The last group refers to the concept of praxis becoming poiesis, where the outcomes are ends that are not subject to temporal limits.[14]

The significance of technology has returned to the discourse on the purpose and meaning of architecture.[15] For example, techne of logos and logos of techne can be used to describe the role of details in a building.[16] Architecture without architects would be a construction that is synonymous to indigenous and vernacular making with the use of appropriate technology. Technology is a direct correlation from the knowledge of elders passed down through generations originally learning from natural sciences. The technology is a direct response to first hand knowledge that has come from our surroundings of the natural environment. This is only possible by understanding the evolution of craft to the applied sciences emerging from the built environment and the ethical regulations of civil and cultural agendas of societies.[17]

Karl Marx states, "it has been commonly assumed that technologies change society in more or less predictable ways; that technology is both autonomous (evolving) and deterministic in its effects."[18]

In contemporary discourse, technology can be understood in many different ways. For example, digital architecture can be seen as a method that allows for links between architecture, science and art. It expresses the importance of experimentation and the capacity to manipulate, which can be seen through the role of the computer in architectural practice.[19] The term technology no longer limits itself to building materials and processes, but is described much more broadly as the understanding of skills and knowledge of the dialectical relationship between humans and the built and natural environment in the assembly of a new overlaid built ecosystem.[20]

Technology is also understood as the process of creating and transforming matter to realize certain ends. It can be a set of tools, devices or methods produced through a technological process, and consists of procedures used to manipulate matter, energy and information. Technology is understood as knowledge that makes this process possible. It is also the system comprised of technological processes, objects, knowledge and the developers and users of technological objects. Another interesting take on technology is that it can be understood as the worldview which has emerged from and drives the technological process.[21]

Technology's foundation is built from the terms, techne and logos, which describe the manner in which something is achieved. It is defined as the application of knowledge through the use of tools, devices and methods to manipulate matter, energy and information. Using nature as a framework, design and technology can be adapted into the built environment. This is demonstrated through the knowledge of craft, fabrication and construction. Architecture becomes a creative endeavor, where individuals becomes the arbitrator between nature and the existing world. Technological procedures have evolved into applications of cultural, sociological and

Cover Image
Sydney Opera House. Photograph. Headout Blog. Headout Blog. Accessed November 9, 2019. https://blog.headout.com/sydney-opera-house-tours/.

Figure 1
Feldberg, Jordan. Supertree Grove. Photograph. Singapore, August 27, 2018.

Figure 2
Milano, Politecnico di. Atropos. Photograph. ArchDaily. ArchDaily, March 26, 2017. https://www.archdaily.com/867696/atropos-this-6-axis-robot-arm-can-3d-print-fiberglass-composites/58d26927e58ece958e000087-atropos-this-6-axis-robot-arm-can-3d-print-fiberglass-composites-image.

13. Vittorio Gregotti, "Introduction" in *Architecture, Means and Ends*, (Chicago: The University of Chicago Press, 2010), 3.
14. Ibid.
15. Joseph Rykwert, "Organic and Mechanical" in *Rethinking Technology: a Reader in Architectural Theory* (London: Routledge, Taylor & Francis Group, 2007), 326-327.
16. Marco Frascari, "The Tell-The-Tale Detail" in *Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory 1965-1995 (New York: Princeton Architectural Press, 2008),* 500.
17. Joseph Rykwert, "Organic and Mechanical" in *Rethinking Technology: a Reader in Architectural Theory* (London: Routledge, Taylor & Francis Group, 2007), 326-327.
18. William W. Braham, Jonathan A. Hale, and John Stanislav. Sadar, "Introduction" in *Rethinking Technology: a Reader in Architectural Theory* (London: Routledge, Taylor & Francis Group, 2007), xii- xiv.
19. Antoine Picon, "Architecture, Science, Technology and the Virtual Realm" in *Architecture and the Sciences: Exchanging Metaphors* (New York: Princeton Architectural Press, 2003), 311.

House of Usher, Unknown Artist

"The 'uncanny' is not a property of the space itself nor can it be provoked by any particular spatial conformation; it is, in its aesthetic dimension, a representation of a mental state of projection that precisely elides the boundaries of the real and the unreal in order to provoke a disturbing ambiguity, a slippage between waking and dreaming."[1]

Uncanny

by : Margaret Burt & Michelle Philip

Uncanny *(adj)*

/ən-ˈka-nē/

A strange or mysterious feeling, especially in an unsettling way.

French:
Étrange

Ojibwe
Mayagi - "strange"

German
Unheimlich - "unhomely"

Theorists
Ernst Jentsch
Sigmund Freud
Anthony Vidler
Jacques Lacan
Immanuel Kant
Karl Marx

The etymology of *canny* stems from the Anglo-Saxon root ken defined as "knowledge, understanding, or cognizance; mental perception"--thereby defining *un*-canny as "beyond knowledge".[2] Freud's concept of the uncanny has been the undercurrent of many other definitions of the word. The notion concept has started to function autonomously as theoretical concept in disciplinary circles. This also creates a fundamental paradox: the uncanny as a concept has come to signify the fundamental difficulty or even the impossibility of defining concepts as such.[3] This directly links itself to psychoanalysis, not only as a specialized term, but as a colloquial term. The definition of unheimlich or uncanny is categorized as a social construct, depending on the observer's cultural background.

The first time uncanniness was explored was in 1906 by Ernst Jentsch in his essay titled "Psychology of the Uncanny".[4] He believed that the feeling of uncanny arose when one was disoriented or uneasy within their environment[5], and had a strong correlation with intellectual uncertainty.[6] This is why not everyone will feel uncanny from the same situation, nor will the same event cause always be uncanny for an individual. He believed that it was less important to understand what uncanny was but rather "how the uncanny arises in psychological terms."[7]

1. Anthony Vidler, *The Architectural Uncanny: Essays in the Modern Unhomely* (Cambridge, Mass: MIT Press, 1999) 11.
2. "Canny (Adj.)," Index, accessed September 29, 2019, https://www.etymonline.com/word/canny.
3. "The Concept as Ghost: Conceptualization of the Uncanny in ...," accessed September 29, 2019, https://www.researchgate.net/publication/287645117_The_concept_as_ghost_Conceptualization_of_the_uncanny_in_late-twentieth-century_theory.
4. Jo Collins, and John Jervis, "Document: 'On the Psychology of the Uncanny' (1906): Ernst Jentsch," *Uncanny Modernity*, 2008, 216–228. https://doi.org/10.1057/9780230582828_12, 1.
5. Collins, *Psychology of the Uncanny*, 1.
6. Ibid, 3.
7. Ibid, 1-2.

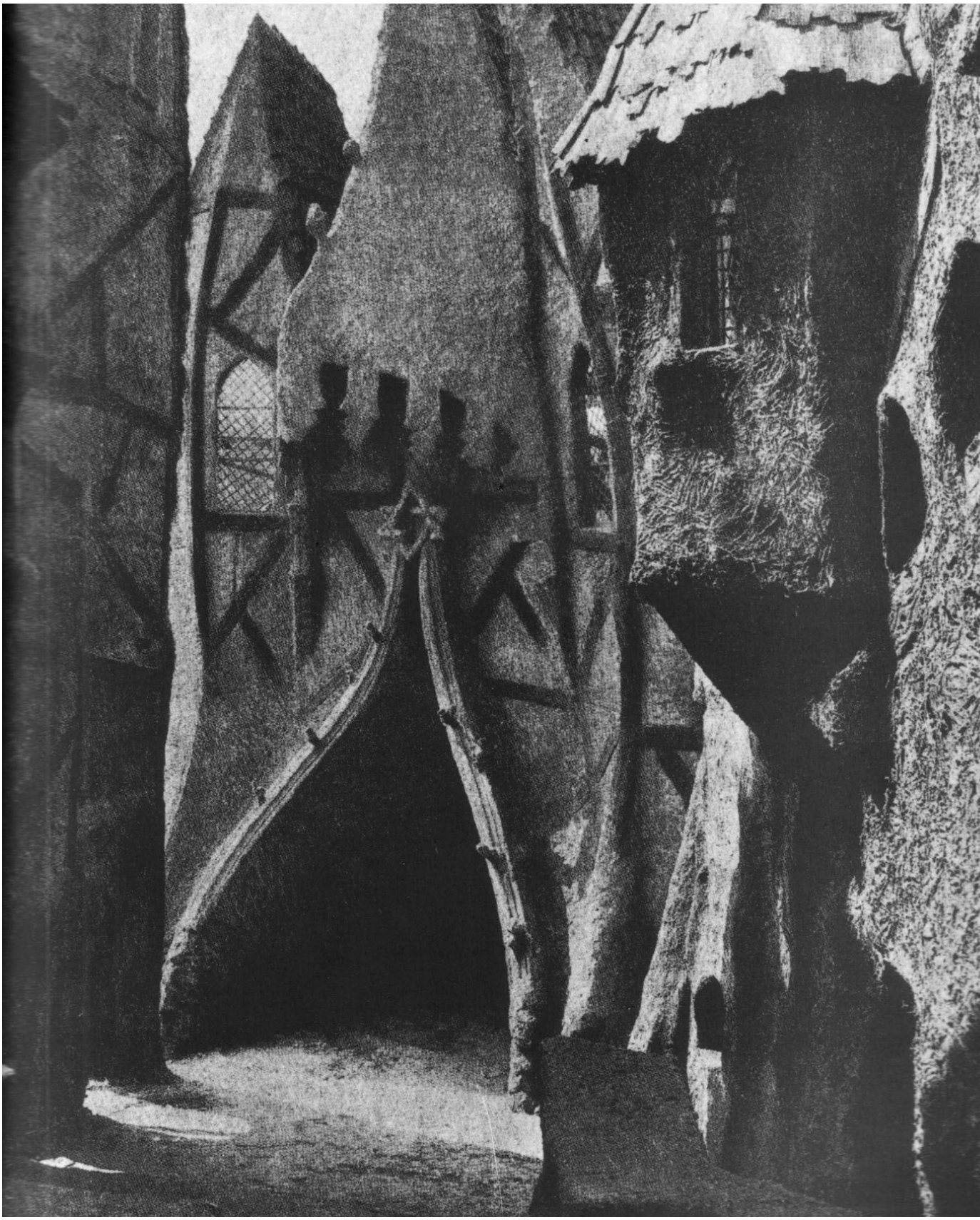


Figure 1 The Golem, Paul Wegener, 1920

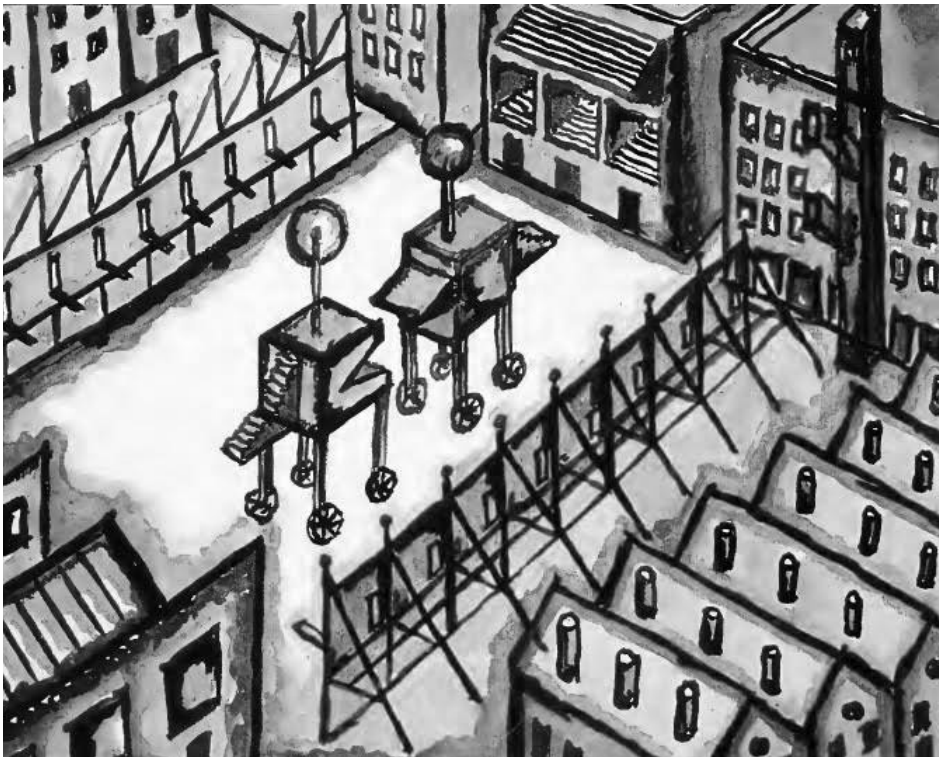


Figure 2
The Riga Project, John Hejduk, 1987.

In his 1919 essay, "The Uncanny", Sigmund Freud establishes the term 'heimlich' as "belonging to the house, not strange, familiar, tame, intimate, comfort-able, homely, etc."[1] Therefore by relation, the term un-canny belongs to all that is terrible, that is beyond what humans know to be comfortable. However, since not everything unfamiliar is scary, the relation cannot be directly inverted--something memorable has to be distinguished by the viewer to make a reference to the uncanny. Freud concludes that there are two situations where uncanny experiences can happen: the first instance is a repressed infantile complex, and the second instance is a primitive belief that we have surmounted to be false to be proven true.[2] Tying this to the events of cultural phenomenons however is part of the issue of defining 'uncanny'.

Fascinated with the term, Anthony Vidler researched 'uncanny' and unveiled less known historical works who have also explored this word. Published in 1992, "*The Architectural Uncanny*" provides a comprehensive discourse on the term so vaguely defined throughout the years. He addresses this exploration through a series of essays. This text will consider four of the themes studied by Vidler, with accompanying texts written by other experts.

Vidler begins his discussion on uncanny architecture with the topic of *Unhomely* (*unheimlich*) *Homes*. He uses an example of haunted houses, which he believes to be particularly uncanny because of its apparent domesticity, normalicity, and the relation between intimate shelter and alien invasion. It is a hostile entity invading something we know to be an old,

1. Sigmund Freud, "The Uncanny," *Romantic Writings*, 2017, p. 2, https://doi.org/10.4324/9781315088617-16.
2. Vidler, *Architectural Uncanny,* 79.

familiar, customary world, subsequently bastardizing it--a malevolent force that should have remained hidden, resulting in an uncanny feeling.[3]

In *Architecture Dismembered*, it is explained that architecture cannot exist without people. Building from what we know is an intrinsically way of thinking. Veering away from modernism, the architects that follow this philosophy use three parameters:

> *"(1) the notion that building is a body of some kind;*
> *(2) the idea that the building embodies states of the body or, more importantly, states of mind based on bodily sensation; and*
> *(3) the sense that the environment as a whole is endowed with bodily or at least organic characteristics."*[4]

Vidler strengthens Freud's definition of uncanny through a brief mention of Lacan's "The Mirror Stage" essay. When reviewing the actual text, it is clear that Lacan proposes the model of a pre-mirror stage body, close to infantile age, where the mind severs the body into the actual self and the alternate self (what he describes as the spatial identification of the self with regard to its reflection--otherwise known as "the morcelated body"[5]). The architect then attempts to mold architecture as a reflection of this "alternate self", vying to become this spatial identification that is unattainable.[6]

Vidler continues to take the relationship of the uncanny in the built environment, this time examining its uses in modern architecture. In *Home for Cyborgs*, Vidler considers that with the rise of modernism the home has become industrialized- a "machine for living in"- which has blurred the boundaries of organic and inorganic.[7] He uses the example of Art Nouveau, which takes organic figures and constructs them out of inorganic material, blurring the line between the two[8]. This goes all the way back to Jentsch's idea that the truly uncanny is based off our own doubt on whether a living being is animate and, conversely, whether a lifeless object may actually be animate, particularly when this doubt is felt obscurely in one's consciousness[9]. When viewing architecture in the Art Nouveau, it appears that at any moment the ornament could come to life, although this is not an intellectual thought at the forefront of the viewers mind, it can still result in a feeling of the uncanny.

In *Vagabond Architecture*, Vidler addresses specifically the work of John Hejduk, who explores the idea of mobile architecture. Hejduk's work evokes the culture of vagrants and strangers which would invade 'host' cities, perpetuating the attributes of criminality and a wayward lifestyle. His designs defy rationalist classification, at odds with the institutionalization of city space which has defined parcels of lands, closed and divided. Nomadic architecture, although always present has remained hidden from "normal" society, has now come to the forefront, resulting in a built space that is uncanny.[10]

Therefore by relation, the term un-canny belongs to all that is terrible, that is beyond what humans know to be comfortable.

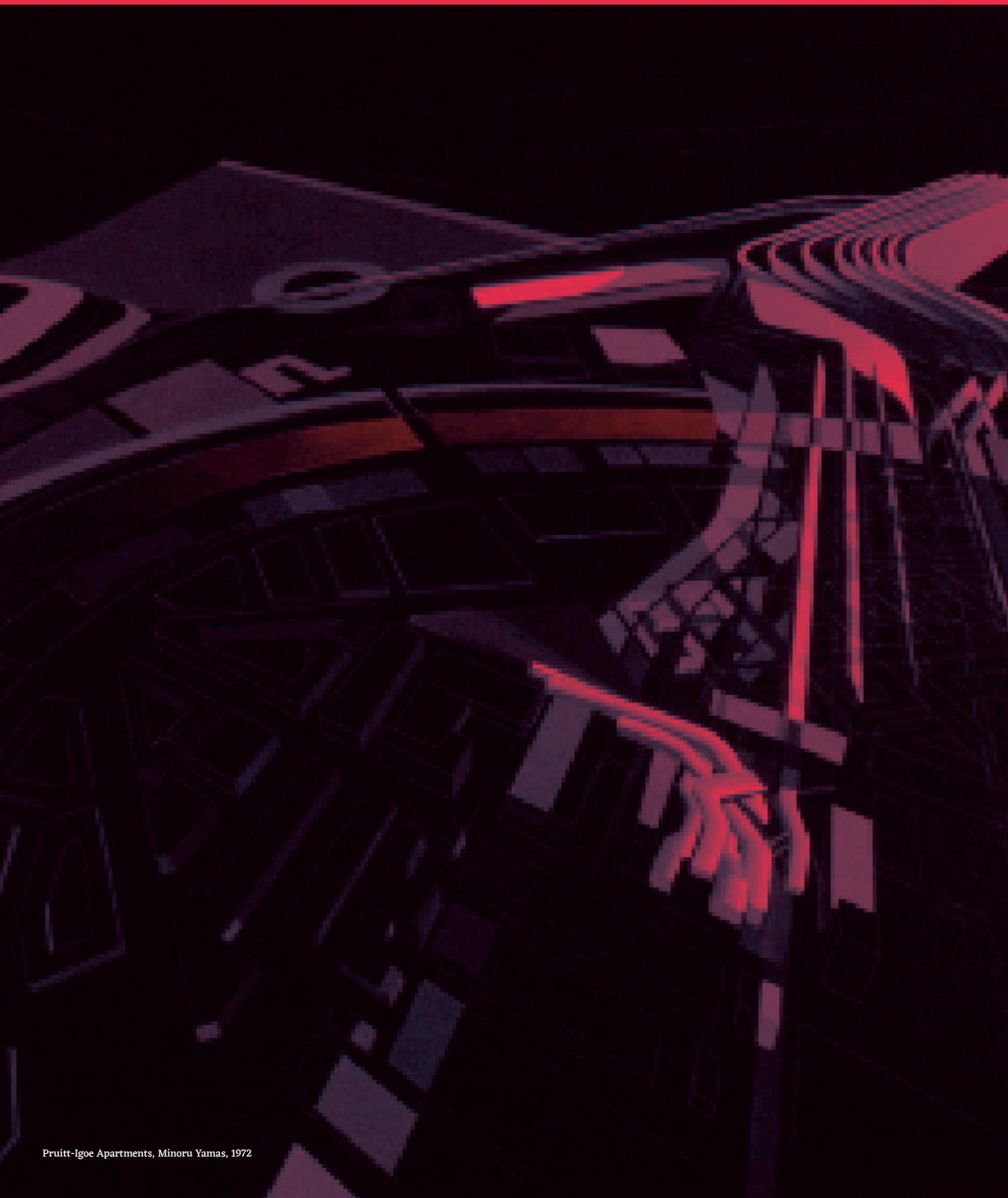
To surmise, Vidler highlights uncanny characteristics of today's architecture. He exposes their neo-constructivist forms mimicking the morcelated body. He recreates capitalist spaces to occupy that in a rebellious manner. Uncanny can be used to take a critical approach to a sublime architecture, questioning what a utopia actually represents within the realms of possibility.[11]

Cover Image
"The House of Usher." in Virtual Reality. Accessed September 29, 2019. https://www.youvisit.com/tour/tanvi.banota.

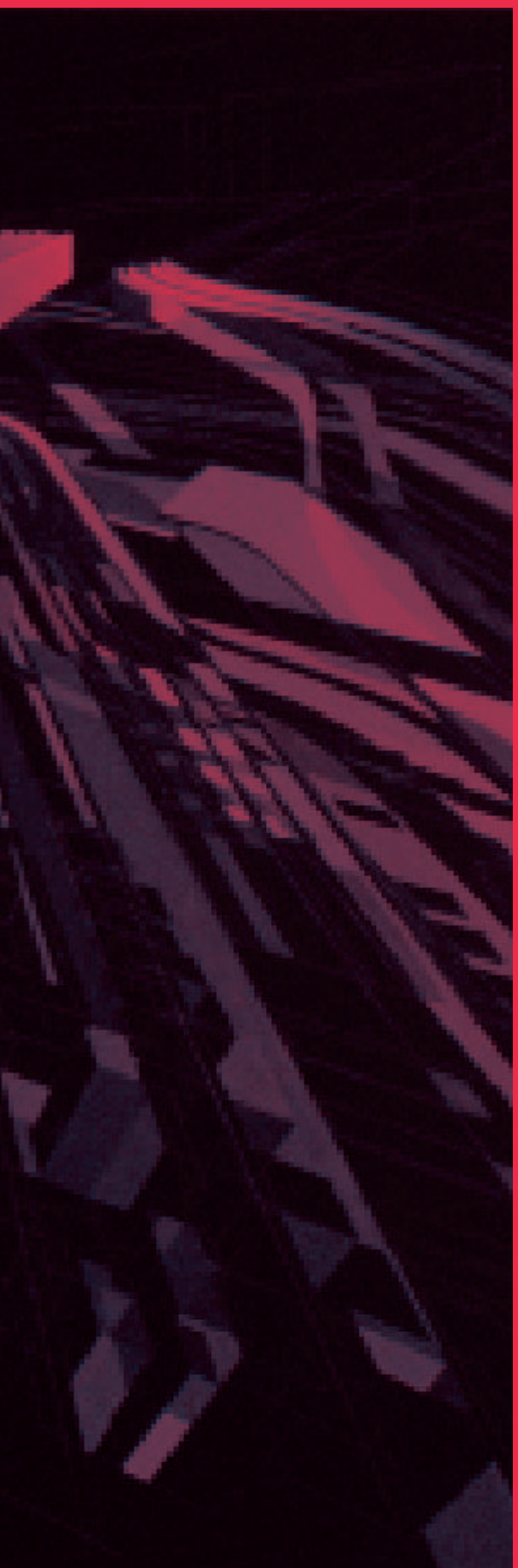
Figure 1
The Haunted and the Unhomely. Accessed September 29, 2019. https://www.tboake.com/uncanny/tout/The Haunted and the Unhomely - The Golem.html.

Figure 2
Lucarelli, Fosco. "John Hejduk: The Riga Project (1987)." SOCKS, February 10, 2018. http://socks-studio.com/2013/09/05/john-hejduk-the-riga-project-1987/.

3. Ibid, 17.
4. Ibid, 70.
5. Jacques Lacan, "Écrits: A Selection," 2001, pp. 1-9, https://doi.org/10.4324/9780203995839.
6. Ibid
7. Vidler, *Architectural Uncanny*, 147.
8. Ibid, 153-158.
9. Collins, *Psychology of the Uncanny,* 223.
10. Vidler, *Architectural Uncanny*, 207-214.



Pruitt-Igoe Apartments, Minoru Yamas, 1972



"We are not outsiders on a tour of eu-topia. We are already subjects in dys-topia; and our only emancipatory alternative is to get going on this new trajectory."[1]

Utopia

by : Chris Baziw & Matt Hunter

Utopia *(n)*

/juːˈtoʊpiə/ yoo-TOH-pee-ə

A place of ideal perfection especially in laws, government, and social conditions

French:
Utopie

Greek:
Ουτοπία

German:
Utopie

Theorists
Plato
Thomas More
Edward Bellamy
Lewis Mumford
Le Corbusier
Frank Lloyd Wright
Jane Jacobs

In 1500 author Thomas More wrote a novel about an idyllic society on an island which he called Utopia.[1] This society lived in perfect harmony, they were separated from the rest of the world but most importantly, they did not exist. The term Utopia, coined by More, can be traced to the greek word ou-topia derived from ού ("not") and τόπος ("place") which translates as "no-place."[2] However the definition of the word that is more commonly understood today can be traced to the greek word eu-topia, derived from εὖ ("good" or "well") and τόπος ("place"), which translates as "good-place."[3] In his book, More describes his vision of a perfect socialist society, yet by naming the island "nowhere" More is acknowledging that what makes his society perfect would be impractical in the real world and could never exist.[4] The duality in this etymology is the crux of the word and theory of utopia, a society or place that is so good it cannot exist.[5] Yet this dual meaning has not stopped countless philosophers, religious leaders, architects and planners from trying to create their own utopias, which from the name themselves are doomed from the get go.

At the beginning of the 20th century, the world was facing devastation and destruction brought by World War I. In architecture, the modernist movement was beginning to take shape, and architects believed that their buildings could help solve the world's problems. With new materials like glass, iron, and steel made available by the Industrial Revolution, modernist

1. More, Thomas. Of a Republic's Best State and of the New Island Utopia, 1516.
2. Merriam Webster Dictionary, s.v. "Utopia," accessed Septembre 22, 2019, https://www.merriam-webster.com/dictionary/utopia#learn-more
3. Ibid
4. More, Thomas. "Utopia." World Literature I: Beginnings to 1650, Part Three: The Renaissance, edited by Laura Getty, et al., University of North Georgia Press, n.d., pp. 331.
5. Trufelman, Avery. "Can Utopias Exist". Nice Try!. Podcast audio, May 30, 2019. https://www.curbed.com/2019/5/7/18514684/nice-try-podcast-utopian-avery-trufelman. Peter Blundell Jones, Doina Petrescu and Jeremy Till, Architecture and Participation (Abingdon, Oxon: Spon Press, 2005)

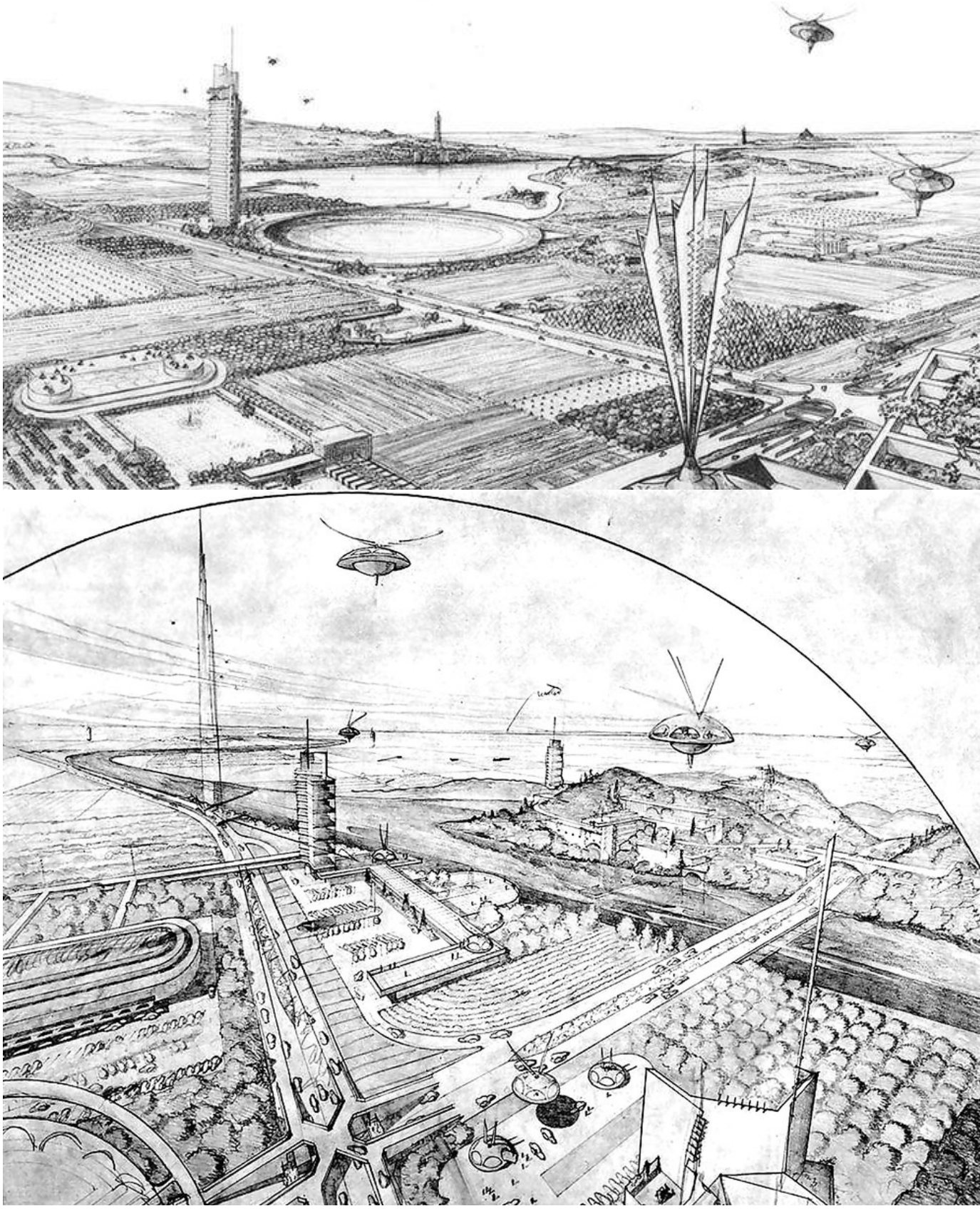


Figure 1 Broadacre City, Frank Lloyd Wright, 1932

Figure 2
Pruitt-Igoe Apartments, Minoru Yamas, 1954

architects began to imagine entirely new cities that supported utopian ideals and were devoid of the corrupted bourgeois sentiments often blamed for many of society's dilemmas.[6] Some utopian visions focused on new technology, others on open, untouched landscapes, and still others were based on new social orders, but all were united under radically avant-garde and cutting-edge architecture. While each architect's ideals varied, they all hold one thing in common: they could never be built.[7] Only able to exist in theory—the basis of a utopia—the architecture in the following utopian visions is carefully planned and highly systematic. While these visions suffered from a belief that one person's ideas could change an entire society.

Through the 1920s and 1930s, modern "master" Le Corbusier experimented with a series of highly utopian urban planning concepts, stemming from his visions of an ideal city that he hoped would reunite citizens with a highly ordered and open environment, elevating culture on a universal basis.[9] Corbusier believed the efficient plan could transform society by raising the standard of living for all socioeconomic levels, thus sparing the country another revolution. However, the "Plan Voisin" actually divided housing based on class, illustrating flaws in his utopian aspirations.[10]

While many earlier modernist utopian visions centered around densely packed cities, Frank Lloyd Wright rejected urban areas altogether. Believing that city life was plagued by corrupted values, Wright fled to the suburbs, where he envisioned a new, modernized lifestyle set within bucolic landscapes. In 1932, Wright drafted a vision for his "Broadacre City," named because each

6. Coleman, Nathaniel,--. 2014. "The Problematic of Architecture and Utopia." Utopian Studies 25 (1): 1-22.
7. Ibid
8. "The Paradoxes of Progress." 2001.Arq: Architectural Research Quarterly 5 (1): 3-3.
9. Ibid
10. Ibid
11. Dehaene, Michiel. "Broadacre City: The City in the Eye of the Beholder." Journal of Architectural and Planning Research, 2002, 91–109.

family received a one-acre plot of land.[11] The complete antithesis of Le Corbusier's ideal cities, Broadacre championed low-density development centered around automobile transit, where all amenities could be easily accessed within a radius of 150 miles. Wright detailed plans for spacious landscaped highways, beautifully designed public service stations, roadside markets, garden schools, and parks, which were integrated to foster self-improvement and maximize enjoyment. Unsurprisingly, Wright's utopian city did not anticipate today's widespread problems of suburban sprawl and the environmental degradation that comes from the basic principles of Broadacre.[12] Much like utopian visionaries before, "Broadacre City" was born from a disgust with city life—a modern man's prevention of overcrowded, aesthetically displeasing lower-class areas.

The utopian visions of Le Corbusier and Wright spawned a modernism that strived for perfection under their own ideals, however what they shared was a critical lens for realism. The antithesis of this idea is the failed utopia of the Pruitt Igoe apartment complex. The Pruitt Igoe buildings were supposed to be the perfect modern housing solution, a corbusian utopia for the underprivileged of St Louis.[13] The architect Minoru Yamasaki followed Corbusier's utopian planning concepts to a tea, yet within 10 years the project was such a failure it was demolished. The building was demolished because the particular realities of the population that inhabited the building transformed its utopian vision to an active dystopia of crime and conflict.[14] Instead of looking first to the community, Yamasaki looked to Corbusier for the plan of his buildings and his utopian vision never came to fruition.

The demolition of Pruit-Igoe is often cited as the death of modernism yet they are only one drop in the bucket of infinite dead utopias. In his contribution to the seminal text on the importance of dystopias Tom Moylan in Dystopia(n) Matters writes about the duality of utopia and dystopia, that is helpful in understanding how Yamasaki's utopian intentions resulted in a dystopia. Moylan theorizes that the blind pursuit of utopia leads inevitably to dystopia.[15] Despite his rather pessimistic views, Moylan has more to say about the role of imaging new worlds.

"We are not outsiders on a tour of eu-topia. We are already subjects in dys-topia; and our only emancipatory alternative is to get going on this new trajectory."[16]

With this statement Moylan redeems the utopian vision, although an effort for full utopia is often doomed, the optimism that lies behind utopian visions is critical to the continued betterment of the world.

Thomas More combined the words for a "good-place" and "no-place" in essence to warn the readers of his book that although utopia exists on paper, reality comes with a complexity that makes a true utopia impossible.[17] The lesson that came from the failed utopian experiments of the modernists was that architecture alone cannot solve all of the worlds problems. We as architects and creators should hold onto the optimism behind the utopian idea while keeping in mind the limits of our practice and approach each project with a critical lens to ground us to reality, where utopias can't exist.

Cover Image
https://images.adsttc.com/media/images/590c/bddf/e58e/cee9/b200/002b/large_jpg/CO_Wikimedia_user_Cadastral_-_PD.jpg?1494007251

Figure 1
"Skylight" n.a. n.d. Photograph. Accessed from The Nordic House: Alvar Aalto (1999).

Figure 2
https://garagemca.org/en/event/screening-the-pruitt-igoe-mythW

12. Dehaene, Michiel. "Broadacre City: The City in the Eye of the Beholder." Journal of Architectural and Planning Research, 2002, 91–109.
13. The Pruitt-Igoe Myth. Unicorn Stencil, 2012.
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ÉCOLE D'ARCHITECTURE

Complexity

Embodiment

Expression

Geometry

Historicism

Innovation

Memory

Movement

Ornament

Pattern

Place

Post-modernism

Proportion

Semiotics

Spatial Politics

Sustainability

Technology

Uncanny

Utopia