PIECEMEAL AESTHETICS: POETICS OF PARTS IN USONIAN AUTOMATIC HOUSES

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ABSTRACT
In 1950s a small number of houses, which their architect Frank Lloyd Wright called Usonian Automatic Houses, were built across the country. As the name also suggests, these were single-family houses built along the spatial organization principles of Usonian houses. However, unlike earlier Usonian houses, they were made of custom concrete blocks that can be produced on site, and assembled in a variety of ways.
These houses, like previous examples of Usonian Houses, were part of Wright's solution to small house problem, but with them he opens a new page as he aims to eliminate the role of the contractor, so that the house owners would have flexibility over construction period and cost.
Usonian Automatic houses have been considered a negligible part of Wright's career as they were never studied as a category, and decisively left out in studies concentrating his work as a whole –or his residential buildings as theme. Studies upon any one of them is occasionally included in studies framed by materials or methods. Only a few studies, concentrating on Usonian houses, briefly mention them as a category of their own. And even then, neither the number and identification, nor the way they are treated is settled. They are represented as a marginal fraction, or experimental projects on the way towards prefabrication, which matured in panel construction houses. This paper is a re-reading of their history as an aesthetic paradigm as well as a technical one.

INTRODUCTION
In 1950s a small number of houses, which their architect Frank Lloyd Wright called Usonian Automatic Houses, were built across the country. As the name also suggests, these were single-family houses built along the spatial organization principles of Usonian houses. However, unlike earlier Usonian houses, they were made of custom concrete blocks that can be produced on site, and assembled in a variety of ways.
These houses, like previous examples of Usonian Houses, were part of Wright's solution to small house problem, but with them he opens a new page as he aims to eliminate the role of the contractor, so that the house owners would have flexibility over construction period and cost.
Although they did not receive much attention in their glory days, when they showed up in the market around five decades later, they attracted collectors, as well as conservationists. Media coverage, made them visible for a while, yet it did not extend the scholarly interest in these houses. This paper is a re-reading of their history as an aesthetic paradigm as well as a technical one. In following pages Usonian Automatic Houses are identified, and contextualized within the larger frame of Wright's work. Instead of a technical framework that casts them as a marginal fraction, a theoretical framework that re-connects them to rest of Wright's works is proposed.

Identifying Usonian Automatic Houses
Usonian Automatic Houses, were initially proposed for small, owner-built houses, and built across a large geography. As construction was not closely supervised by Wright's office, documentation about these houses are scarce. Compared to prairie houses and the earlier Usonian examples, these houses are almost invisible in any selection of Wright's works, or compendiums. Therefore, the no complete list of Usonian Automatic houses was ever published. The work in this paper began by tracking down any reference to Usonian Automatic Houses, scholarly sources, as well as the rather new interviews made available during sales.[1]
It is not only the lack of interest but also an apparent confusion that made these houses unaccountable. Wright has starting using concrete blocks long before the first Usonian Automatic House was built. Earlier uses differed in two ways. Either the concrete masonry walls were for enclosure, but they were not load bearing, or they were load bearing, but were used in presence of other cast on site elements, and elements of other materials, such as wood beams or roofs. Often, earlier uses of concrete blocks are listed as Usonian Automatic Houses, or well-known unbuilt examples were omitted. Therefore, rare existing accounts differ substantially. Here, the basic criteria used for identifying Usonian Automatic houses were the continuous use of concrete blocks through all of buildings surfaces, horizontal and vertical. Through critical comparison of existing accounts, and survey of the comprehensive selections of Wright's works, list of Usonian Automatic Houses was re-identified.

Only six of these houses were ever built: Benjamin Adelman House (Phoenix AZ, 1951), Gerald Tonkens House (Amberly Village OH, 1954), W. B. Tracy House (Normandy Park WA, 1954), T. A. Pappas House (St. Louis MO, 1955), Toufic Kalil House (Manchester NH, 1955), and Dr. & Dorothy Turkel (Detroit MI, 1955) (figs. 1-6).[2]

Figure 1: Benjamin Adelman House (Phoenix AZ, 1951), viewed from the North, circa 1968. Photographed by William Storrer, Source: Oak Park Public Library.

Figure 2: Gerald Tonkens House (Amberly Village OH, 1954), Photo Credit: William Allin Storrer, 2003.

Figure 3: W. B. Tracy House (Normandy Park WA, 1954), Photo credit: Jaydec, 2011.

Figure 4: A. Pappas House (St. Louis MO, 1955), Photo: Pappas, B. K. (1985) *Frank Lloyd Wright: No Passing Fancy: A Pictorial History*. St. Louis: Bette K. Pappas.

Figure 5: Toufic Kalil House (Manchester NH, 1955), Photo: Douglas M. Steiner, 2007.

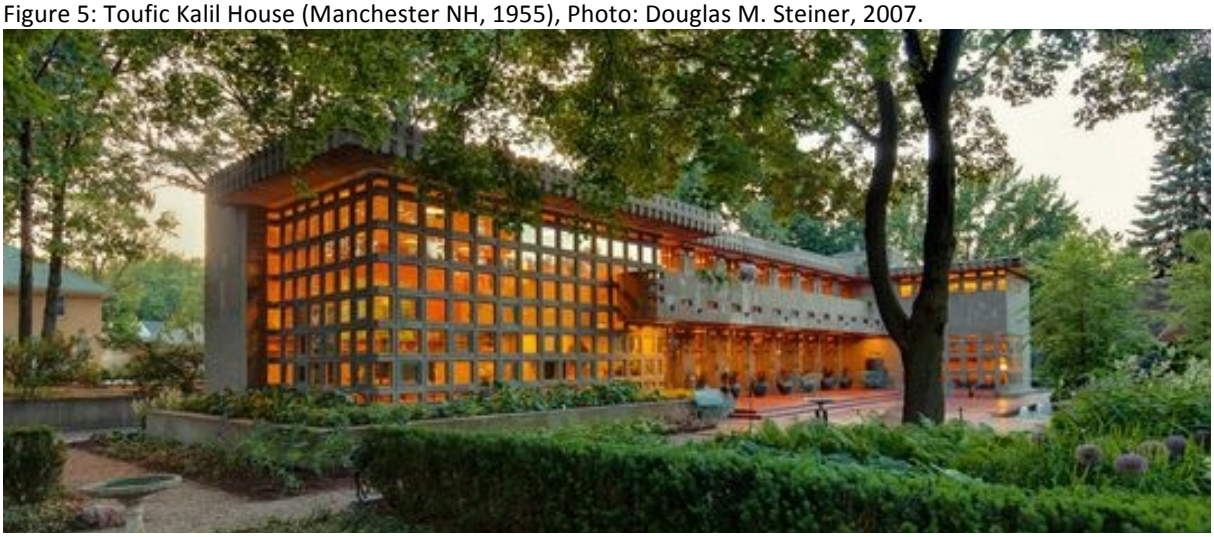

Figure 6: Dorothy Turkel House (Detroit MI, 1955). Photo: Jason Keen, Source:

http://www.freep.com/story/money/business/michigan/2015/05/16/wright-architecture-detroit-ltu/27359829/

Four projects, namely Louis B. Frederick House (Barrington IL, 1954,) Robert Sunday House (Marshalltown IA, 1955), Paul Trier House (Des Moines IA, 1956) and Andrew B. Cooke House[3] (Virginia Beach VA, 1956) were designed as Usonian Automatic Houses but their plans were revised later to build with rather conventional means of construction associated with Usonian Houses. (Pfeiffer, 2011) (Morse-Fortier, 1994).

Wright proposed Automatic Usonian blocks for two non-residential projects. Pieper-Montooth Building, which was the house of Horizon Builders Company (Scottsdale AZ, 1953); and the Clinic for Dr. Kundert and Dr. Fogo Scheme I, (San Luis Obispo, CA, 1955). While appropriation of Automatic Usonian blocks for non-residential buildings seems to justify the accounts that treat them as experimentation with a structural system, rather than a derivations of Usonian houses, it should be noted that these two buildings were comparable to the residential examples listed above in their size, plan organization and their look.[4]

In fact, the striking similarity was not a mere outcome of shared material and structural system. They were intended as model buildings. The Horizon Builders was a company founded by two of Wright's apprentices from Taliesin Arthur Pieper and Charles Montooth, who wanted to produce Automatic blocks and serve as a contractor for automatic houses. As such, the building was a showcase as well as office space. This business adventure never took of, but the idea that Automatic building blocks can be a mode of construction adopted for detached buildings lingered. Kundert Clinic was designed with that idea in mind. Later, the plan was revised and implemented with brick and wood.

There is no complete list of unbuilt Usonian Automatic projects published. The projects identified during this study are as followed: Arthur J. Levin House (Palo Alto CA, 1954), Oscar Miller House (Milford Village MI; 1955), Mel R. and Carole Blumberg Residence (Clinton, IA, 1955), Gerald Sussman House (Poundridge, Westchester County, NY, 1955)[5], J.L. Smith House (Kane Country IL; 1955), David Hunt House, (Scottsdale AZ, 1956), Gate Lodge for Edgar J. Kaufmann Jr. (Fallingwater, Mill Run PA, 1956), Leonard Jankowski House Scheme II (Oakland County MI, 1956), and Usonian Housing Project for Walter Bimson (Phoenix AZ, 1957).[6]

Literary Survey

Usonian Automatic houses seem to have been considered a negligible part of Wright's career. They were never studied as a category, and decisively left out in studies concentrating his work as a whole, or his residential buildings as a category. For instance, neither Vincent Scully, nor Neal Levine, both prime Wright scholars, incorporates automatic houses to their historical surveys of Wright's work.[6]

Reflection on any one of them is occasionally included on studies framed by materials or methods.[7] Yet, with the exception of Leonard J. Morse-Fortier's "From Frank Lloyd Wright's Usonian Automatic Building System: Lessons and Limitations in a Lost Paradigm," (1994) [8] only a few studies concentrating on Usonian houses briefly mention them as a category of its own. And even then, neither the number and identification, nor the way they are treated is settled.[9] They are represented as a marginal fraction, or experimental projects on the way towards prefabrication, which matured in panel construction houses.[10]

The reason behind these later works of Wright being slippery ground for researchers might be a conceivable, yet never conducted, discussion of authorship. With the founding of Taliesin Fellowship Wright had a steady workforce of reliable drafters that he trained. Design drawings from that period were authorized by Wright with a red square aligned with drawing title, located on the bottom of the paper. While this was the custom for a few decades, the fact that he was over eighty years old when these buildings were designed and built puts them in a questionable position. It is not only his age that makes his supervision questionable, but also his active involvement with the construction of Guggenheim Museum throughout 1950s. Wright had put his energy and efforts into Guggenheim Project in a level that he might have put himself in a situation similar to his once-beloved master and former boss Louis Sullivan, who, by concentrating on public buildings and assigning residential ones to Wright, have opened up and directed Wright's career.

Precedents

While the question of authorship remains to be dealt with, these projects are not as marginal within his *oeuvre* as they are presented. Concrete building blocks, which distinguish these houses from earlier Usonian examples, can be categorized as continuation of the textile blocks that Wright have designed and built with, in 1920s.[11] Interestingly, one of those buildings is pointed out by Wright as the first Usonian House, making it a possible intersection of Usonian Houses and concrete block construction. Although the list is never fixed -for Wright or Wright scholars-, Wright calls Millard House,[12] a textile block house built in 1923 in Pasadena CA, as the earliest Usonian house (Wright, 1977,262-74). (fig.7) While Wright's reference is the only possible connection between

Millard House and Usonian Houses,[13] as a concrete block house, Millard house is a relative of Automatic houses if not family of first degree.

Fig.7: Millard House, (Pasadena CA, 1923), View from pond. *Photo: Scott Mayoral. /Crosby Doe Associates*

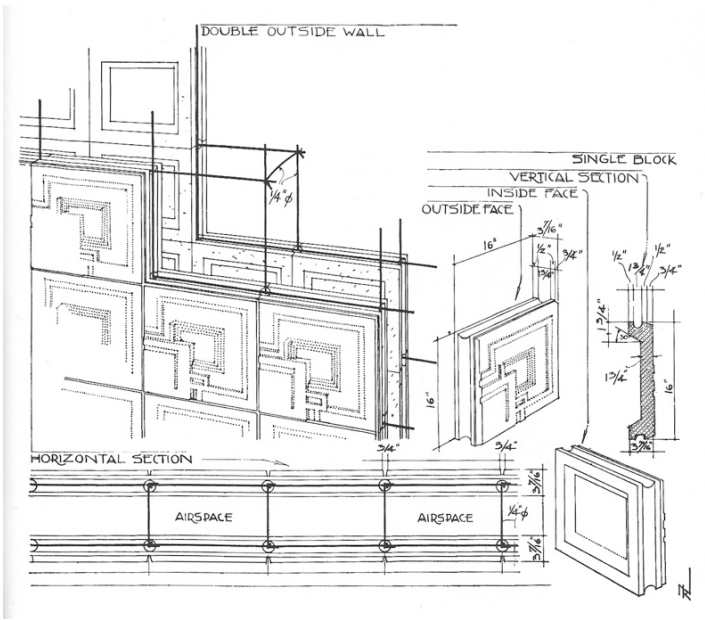

Fig.8: Textile Block construction system, c.1922. Fig.9: Corner detail from Samuel Freeman House (1923, Hollywood Hills, LA).

Concrete blocks used in Millard House –and other textile block houses– differ from the blocks used in Usonian Automatic Houses in two aspects: their tectonic and symbolic character. Early concrete blocks were produced by pouring concrete in wooden molds. While molds shaped one side, the other side, top of the block in mold, was plain.[14] They were produced with mirrored textures and were laid as double skin walls, textured side facing inwards on the interior skin, and exterior on the outer skin. Like Usonian Automatic House blocks, they were

reinforced along the vertical and horizontal lines, where blocks would meet but needed extra elements to bond two walls.[15] (fig.8)

Figure 10: In Benjamin Adelman House (1951), two different kinds of openings are located side by side. Both are fixed windows. The differences are the sizes and locations of the openings. Photo: Shuttermike Photography, 2012.

Figure 11: Toufic Kalil House (1955). View of the inner corner of L-shaped layout shows the units of operable,

and fixed windows used interchangeably. Photo: Dave Williams, Flickr.

The openings of the double skin system used in Textile blocks were similar to frame systems with curtain walls rather than the Usonian Automatic blocks. Textile blocks were exclusively used for walls, which were visibly distinct from the rest of structural elements such as reinforced concrete beams and roof slabs. In addition to this disparity, units were occasionally subtracted for façade organizations, which resulted in images that contrast with the idea of weaving of parts and supports tile like character. (Fig. 9) While both systems required openings for doors, in late automatic houses windows were mostly integrated into the walls as a module. In Adelman House, both kinds of openings are visible, in later examples, like Kalil House, modularization is developed to the point of total integration. (Fig.10-11)
Textile blocks and Automatic blocks also differ in their symbolic character. The period Wright experimented with textile blocks coincides with the re-discovery of civilizations on American continent (Amerindian) and their visual reproduction in publications. (Levine, 1996) It is also right after his adventures in Japan for Imperial hotel. Although, Wright never confesses such a link -except the visible link of nomenclature- the exposure to distinct cultures may have inspired a Semperian understanding of buildings' vertical surfaces as bearers of symbolic meaning as much as means of physical enclosure. (Frampton, 1995) Unlike the textures of automatic house blocks, that are continuous and repetitive throughout the building, and organize and make up features of the walls -such as lighting screens or windows- the patterns of textile blocks are not continuous throughout the building. Textile blocks were paired with plain blocks and concrete walls that support the structure, and were often visible on the façade (fig.7). The blocks were laid to form stripes or shapes on the façade. They sometimes ran along the entire surface but due to their mirroring and countering patterns they create seamless looking patterns that are distinctly different than the expression of automatic blocks.

Figure 12: Living room of the Tracy House (Normandy Park, WA, 1954). Photo: Larry Woodin, Echome Foundation, Ochsner J.K., "Making Your Own House, One Block at a Time," *Arcade*, 30.4, Fall 2012.

Automatic building blocks were not cast to have patterns. As a possibility it was acknowledged by Wright, yet he never proposed. On the other, hand they created a distinct pattern. The blocks were hollowed out on one side or both to make them lighter. The repetition of profiles of blocks themselves as well as the hollowed shapes creates a pattern. In addition to its non-representational character, his pattern also differs from textile block patterns in its three dimensional character. While Textile blocks would create planes, on the interior side, these surfaces would be interrupted by structural elements. Automatic building blocks can create structurally reliable surfaces that are continuous through out the building envelope and ceiling. Although there are still

beams carrying the flat roof and making its generous overhangs possible, they are hard to distinguish from the rest of the surfaces of enclosure. For instance, inside Tracy House, one can distinguish the parts of the ceiling that act as beams, yet no separate element is there. Visually, beams are simply a set of blocks that are of the same size with the ones making coffered slab, spanning the rest of the ceiling. Similarly, the piers, constituted of perforated blocks, located between doors, act like columns, delivering the load transferred by beam to ground, but transparency of perforated blocks contrast the image of solid columns. Compared to columns built

with conventional means, they are barely there. (Fig. 12)
Figure 13: William Tracy positioning the Automatic Blocks of the piers of Tracy House. Photo: Estate of Martha (Elizabeth) Tracy. Included in Ochsner J.K., "Making Your Own House, One Block at a Time," *Arcade*, 30.4, Fall 2012.

Towards A Theoretical Framework

Usonian Automatic Houses are often characterized by their economic (as a mode of affordable housing) or technical (modularity, flexibility, self-building) performance; rarely, by both. What differentiates these buildings form both textile-block houses and other Usonian Houses was their aesthetic appeal as well as their tectonic character.

Integration of different parts of building into each other through use of modular units, assembled in various ways, and integration of visual and structural character of the building, secured by use of single material, are not a mere outcome of economic and technical goals set.[16] On the contrary, this integrity was intentional in the first place. It is a desired quality that Wright emphasized independently. Around the same time with the construction of these houses, Wright wrote:

"Every house worth considering as a work of art must have a grammar of its own. `Grammar,' in this sense, means the same thing in any construction whether it be of words or of stone or wood. It is the shape relationship between the various elements that enter into the constitution of the thing. The `grammar' of the house is its manifest articulation of all its parts." (Wright, 1954, p.181)

For Wright, such a grammar would hold a building's separate parts together and create harmony between parts, and between parts and whole. *(Wright, 1954)* It would be misleading to claim that such grammar, was unique to Usonian Automatic houses. It was an inherent component of Wright's design throughout his career. Yet, it became clearer, and finer towards the end of his career. While both Prairie houses and Usonians speak a certain spatial language, in the latter, materials were used unfinished, and joints were left exposed. The more visible this language became, the more tangible it was to human mind. The question of tangibility was related with the buildings' capacity to transmit meaning. He states that one '*must be consistently grammatical for [building] to be understood as a work of art.'(Wright, 1954)*

Understanding house as a work of art, stated both in the text and the title, is an unmarked reference to John Dewey's aesthetic theory.[17] In *Art as Experience,* Dewey argues that aesthetic value is not inherent in the

object, and readily accessible by an occasional look at the object. It is reproduced by the subject, who traces the marks left from the process of creation. In other words, it is discovered by the subject, who is willing to follow the footsteps of the artist, whether they be brush strokes, chisel marks, gesture of model or construction of the viewpoint. (Dewey, 1934)

In the case of Usonian Automatic Houses, the grammar is visible through the omni-present grid that holds individual elements together. Grid is the index of its construction for the subject willing to discover. When the owner is also the builder, grid is not just an index, or a frame that holds pieces together, but using the linguistic analogy Wright employs, it becomes a language that owners speak.[18] Therefore, the 'automatic' in the nomenclature, can also be interpreted as the cyclical nature of aesthetic experience owners of Usonian Automatic Houses has experienced. (Fig. 13)

Although there is no way to know, or test, what they meant to their owners, one could claim that these houses were beyond shelters and pragmatic enclosures. They stood for a way of living and were an aspect of their identity. They were mostly used by their initial owners until the owner passed away or the house became hard to maintain.[19] In the exceptional case of Pappas House, owners' fascination with their house was strong enough to motivate them to document and publish how it was built.

Post WWII housing proposals are often associated with a housing shortage, which entails discussions of affordability, technical competency, availability of materials and labor but it is worth nothing that need was not the only determining factor of the construction activity. As Sargent pointed out, referring to a survey conducted by *House and Home* in 1958, desire for better housing and trading up was an important drive behind housing sector. (Sargent, 1984. p.148)

When discussed in the framework of necessity or performance, the fact that these houses were not considered as mere shelter or commodity by their owners is overseen. They were parts of a discourse that transcended their scale; and objects of desire whose owners did not only possessed and inhabited but also loved and were affected by. Dewey's theory of art as experience, and pleasure as a dialogue between the work of art and the subject experiencing it, is one of possible interpretations that would make the aesthetic appeal of Usonian Automatics tangible, and help demonstrate an alternative reading, which these buildings truly deserve.

NOTES

1. Interviews with the owners of Tracy house and late owner of Tonkens house became available during the time houses hit the market for the first time in 2012 and 2013 after decades of continuous residency (Taylor, 2003) (Cincinnati.com, 2013).

2. In addition to the built examples listed above, Arthur Pieper House (1952, Paradise Valley AZ) is included in the list of Usonian Automatic Houses by Wright and multiple scholars. It was designed as a Usonian Automatic House, which would provide hands on experience to its owner, whom also had the commission to build Benjamin Adelman House. Although it has walls built with Usonian Automatic blocks, its roof that is built upon wooden beams, and corner blocks, which were cast-on site due to technical problems, make it an odd example among others. Pieper house stands in the mid-point between the projects were concrete blocks were used as a kind of masonry and Usonian Automatic Houses where they seamlessly integrate structure and enclosure. Despite intensions of Wright and its owner, Pieper house is a close precedent rather than a Usonian Automatic house *per se*.

3. Unlike other three, the Usonian Automatic version of Cooke House was not the first proposal but the revised version upon request of the owner who found the first proposal too costly. He later refused the revised plan and built earlier version without consulting Wright. (Pfeiffer, 2011, p.444.)

4. Pieper-Montooth Building had only two offices and a drafting room. Clinic for Dr. Kundert and Dr. Fogo was slightly larger than Pieper-Montooth Building but still comparable to the residential ones. For, instance it was smaller than Turkel House.

5. There is also Dr. Robert G. Walton House (Modesto CA, 1957), which was originally proposed as a Usonian Automatic house but later changed into standard concrete block structure and built. Since Wright did not live to see the working drawings complete, which were signed in 1959 by William Wesley Peters, this project is omitted from suggested lists.

6. The last decade of Wright's life and career is characterized by projects geometrically constructed with circles and arcs. Although they differ in scale, covering individual blocks, clusters and master plans, they seem to trace back Guggenheim rather than survey his projects from that period. (Scully, 1960) (Levine, 1996)

7. See for instance, Terry L. Patterson, *Frank Lloyd Wright and the Meaning of Materials* (1994); or Kenneth Frampton's *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture* (1995).

8. Although it offers a comprehensive introduction, and remains the most comprehensive study on Usonian Automatic Houses up to date, the study frames and evaluates Usonian Automatic Building System as a construction method. Moreover, it predates the personal and institutional accounts that became available when the buildings hit the market in 2000s.
9. For instance, Sargent extends the list to include self-build houses in Galesburg and Parkwyn Villages, near Kalamazoo Michigan. He includes a photo of McCartney House (1951, Parkwyn Village). Although it was built with concrete blocks, the way concrete blocks were used is more aligned with masonry construction than a modular building block system. McCartney house has a triangular plan and no corner modules. The blocks were shaped on site to meet the requirements of the plan. The house has a wooden roof that is supported by concrete block walls, the way they would be supported with any load bearing wall or frame structure. (Sargent, 1976)
10. In 1956-58 he designed four types of prefabricated wood frame and panel construction houses, which were manufactured by Marshall Erdman Company in Madison Wisconsin. (Sargent, 1976, pp.145-47)
11. Presumably it can be traced back to the Midway Gardens Project of 1913, but this link is through visual expression rather than tectonic character.
12. Also known as La Miniatura, Millard house (Pasadena, California 1923)was commissioned by Alice Millard, a rare-book dealer, who previoulsly commisioned Wright for another house. It is first of its kind just like Benjamin Adelman House was when it was built. Adelman House was the second house the owner commisioned. This seems to be a pattern that falls in line with the label 'experimental' associated with these buildings.
13. Its generous size (220 m^2), and plan providing space for servants in addition to living quarters puts Millard House in a different category than Usonian houses.
14. A detailed description of how blocks were produced and assembled is given in relation to each other in Wrights's *The Natural House* (1954. pp.196-205). Although they differed in terms of structural performance and symbolic expression, both concrete blocks and textile block were meant to be produced in standardized manner, as precise as possible but not necessarily 'factoried' away from the site. They were conceptualized as parts of a system that would allow multiple outcomes different in size, organization and relation to site.
15. The gap between two walls was thought as an insulating barrier running along the periphery, and a shortcut for rain that might penetrate the outer skin to be discarded. In some cases when the walls were furnished with wood –woodplates, bookshelves or other furniture for storage– inside, it was laid as a single wall and isolating layers were placed between the wall and the wood plates Their Performance did not meet the expectations of the owners. (Morse-Fortier, 1994.)
16. On the contrary, these buildings proved not to be as economical when they were built and, in the decades past they had a series of structural problems, mostly related with the concrete flat roof. (Morse-Fortier, 1994.)
17. John Dewey and Frank Lloyd Wright were contemporaries. Wright had a downtown office in Chicago while Dewey was a faculty member at the University of Chicago. They traveled the orient around the same time. (McCarter, 2006). This connection may look speculative, as neither side ever acknowledged the other. However, Dewey's 'Organic Democracy' which he defines as a uniquely American form of democracy, that is beyond a system of governance, and more of a moral code, is very similar to Wright's Notion of Organic Architecture.
18. The idea 'knowledge being embodied in experience' is in line with Dewey's ideas on learning and education. (Dewey, 1938)
19. Except Adelman House, which was transferred to a foundation by its owner, and Pappas House whose date of construction is a decade after the rest, they re-surfaced through sales in 2000s, and were mostly in need of serious restoration due to structural deficiencies. Five decades is in line with their expected lifespan as concrete buildings.

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