

Transparency in the Urban Context

a study on the complexity of transparent pieces

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dedication

...the mind of man plans his way but the Lord directs his steps.¹

Proverbs 16:9

Who could of known that a trip through Blacksburg to introduce a newborn son to our families would have led me down this path. For this blessing I am thankful.

To Mom and Dad : for giving me the toys and tools that a student of architecture needs to build his dreams.

To Mike and Kay : for recognizing God's will and providing for my family and me on a daily basis.

To Joel : for reminding me of everything I forgot about legos, and teaching me about fatherhood.

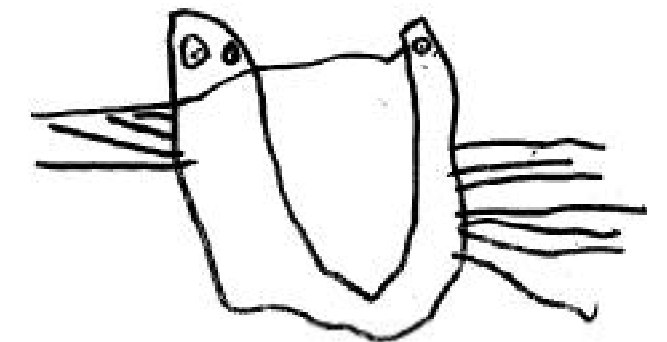
To Erik : whose moans kept me up at night and cries got me up early.

To Vickie : whose unwavering sacrifice, support and faith has made the last three years possible.

With love, I dedicate this work to you.

¹ *The Ryrie Study Bible, New American Standard Translation*, Charles Caldwell Ryrie, Moody Press, Chicago, (1978), p. 960.

² David Wallechinsky, *The Twentieth Century*, Little, Brown and Company, (1995), p. 529.



"The Lion" Joel Harvey, 4 yrs.

Drawing is the art of taking a line for a walk.²

Paul Klee

acknowledgments

*Schools began with a man under a tree, who did not know he was a teacher, discussing his realization with a few others who did not know they were students. The students reflected on the exchanges between them and how good it was to be in the presence of this man. They wished their sons, also, to listen to such a man. Soon, the needed spaces were erected and the first schools came into existence. The establishment of schools was inevitable because they are part of the desires of man.*³

Louis Kahn

I would like to thank my committee for their continued support and constant direction, that provided me the right balance of resistance and approval. I thank Hunter for all the hours that so called “five minute critiques” turn into. Donna for her ability to distill even the most complex design decisions down to a fundamental act. Michael for his vision on what the next step would be before I had resolved the current one. Bob for his ability to put the most abstract thoughts into words.

ii

³ Richard Saul Wurman, *What Will Be Has Always Been: The Words of Louis I. Kahn*, Access Press and Rizzoli International, (1986), p. 261.

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abstract

*Congeniality between form and context has been the hallmark of great architecture throughout the ages. When a manifest conflict arises between function and architectural form, we begin to lose sight of our goals.*⁴

Alvar Aalto

Architecture should strive to create a dialogue between the history of architecture and its future.

This dialogue is really a mosaic of interconnections formed by our conceptions of context and order. These interconnections strive to be transparent so as to introduce a level of complexity that allows for a multitude of readings and is in constant variation as provided by the site, the inhabitants and the building. It is thru these transparent interconnections that dialogue is enriched.

The project has been driven by a reciprocal struggle between specific site conditions, and the development of tectonic pieces that order, clarify and sometimes veil a larger whole. Whose end is to connect with a larger whole and elevate its seemingly simple pieces to a level of complexity that is greater than the sum of those parts.

⁴ Jonathan Reid Ward, Housing Through the Wall: a study of catalytic architecture in the modern city, (1996), architectural thesis, p. 87.

context

con•text *n.* **1.** The setting of words and ideas in which a particular word or statement appears. **2.** The overall situation in which an event occurs. [*<Lat. contexere, to weave.*]⁵

⁵ *The American Heritage Dictionary*, Dell Publishing Co., Inc., (1983), p. 152.

⁶ Alejandro Zaero, "Herzog and de Meuron : Between the Face and the Landscape," *El Croquis*, no. 60, (1993), p. 14.

⁷ John Peter, *The Oral History of Modern Architecture*, A Times Mirror Company, (1994), p. 198.

But what is "**context**"? The word means something different to almost every architect. To Aldo Rossi it may be topological structure, to Hertzberger it may be social behavior, to Venturi it is, perhaps, billboards: to some deconstructivists architect, it may be the challenge of chaos. Architects always need something to hold onto and they take context as something predetermined to argue with, to justify their urban strategy.⁶

Jacques Herzog

Really the problems are mass, material, scale, and how do you answer those? In architecture, just as in color, you either contrast or you complement. That is the situation, but it is not as easy as that.⁷

Eero Saarinen

4 defining context

a matter of elements and details



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Every work of architecture has some form of *context*. Some with a greater influence exerted on it than others but, in an urban setting the problem of context is one which can't be ignored and can't be directly imitated either. **So what is context and how do we respond to it?**

Traditional cultures responded to issues of context in a way that we would call vernacular. That is, they acted on a particular site in ways that were native to that region, such things as material, climate, culture, and craft were instrumental to building. This was done initially for pragmatic reasons but over time there evolved a language of building that was common and specific to that region.

With the advent of modernism there came a breaking away from the past. Society and architecture

were both free from history. Contextual issues became archaic and were not important; the language that had developed over hundreds of years suddenly became outdated.

*The phenomenon of universalization, while being an advancement of mankind, at the same time constitutes a sort of subtle destruction, not only of traditional cultures, which might not be an irreparable wrong, but also of what I shall call in advance the ethical and mythical nucleus of mankind.*⁸

In the early 1980's Kenneth Frampton coined the term "Critical Regionalism." This concept emerged as a response to the architecture of romantic regionalism, (that architecture that is purely a scenographic representation of the past) and the utopianism of the early Modern Movement.



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1 Window and screen, *transparent layering, rear of building Third Street, Williamsport, Pennsylvania.*

2 Window and screen detail.

3 Corn crib, *the environment and the transparent wall, wall construction of an outbuilding.*

4 Warehouse window wall, *light, reflection, and openings, side of building Arch Street, Williamsport, Pennsylvania.*

⁸ Paul Ricoeur, *Universal Civilizations and National Cultures, in History and Truth*, (1965), p. 271-84.



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Critical Regionalism is thought of not so much a style as it is a critical category oriented towards certain common features. These features, or rather attitudes, may perhaps be best summarized as follows.

1. *Critical of modernization, but it refuses to ignore the emancipatory and progressive aspects of the modern architectural legacy.*
2. *Rather than a free-standing object the structure is thought of as a "place-form". That is it belongs to a specific territory.*
3. *Architecture is a tectonic fact - rather than a scenographic episode.*
4. *Stresses site - specific factors such as topography, local light, climatic conditions.*
5. *Emphasizes the tactile as well as the visual.*
6. *It will reinterpret vernacular elements within the whole.*
7. *It flourishes in cultures that escape the thrust of universal civilization.*⁹

The underlying lesson is, all things in the man-made landscape - towns, streets, buildings have to be viewed as orders of connecting relationships rather than mere objects in space. The equation is also spoiled when buildings cease to use the basic physical vocabulary of architecture and instead resort to tacked on symbols. One is a real connector with the real world; the other is an appeal to secondhand mental associations. To correct this problem, we need to **relearn the lesson on how to connect things; and what becomes critical, to connecting things is the transition zone, the in-between, and how these things respond to one another, this is what initiates dialogue.**



3

1 Balcony element, *corner of Fourth and Pine Street, Williamsport, Pennsylvania.*

2 Balcony element, *Arch Street, Williamsport, Pennsylvania.*

3 Balcony element, *rear of building, Third Street, Williamsport, Pennsylvania.*

4 Brick corner detail, *corner of Hepburn Street and Third Street, Williamsport, Pennsylvania.*

⁹ Kenneth Frampton, *Modern Architecture*, Thames and Hudson Ltd, (1992), p. 327.



4

6 making connections

interrelation of street and building

The street was, originally, the space for actions, revolutions, and celebrations, and throughout history you can follow from one period to the next on how architects designed the public space on behalf of the community which, in fact they served. With respect to every urban space we should ask ourselves how it functions: for whom, by whom and for what purpose.

The street and its urban buildings are complementary. One must consider the quality of the street-space and of the building in relation to each other. A mosaic of interrelationships - as we imagine urban life to be - calls for a spatial organization in which built form and exterior space (which we call street) are complementary in the spatial sense and therefore reciprocate in forming each other. **What becomes critical to this relationship is the**

variety and level of transparency required in the built form, to permit "building" and "street" as spaces to have different degrees of public accessibility and allow one another to penetrate each other in such a way that the sharp division between private and public domain is softened.



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1 Interior of model looking out towards streetscape, *natural light is softened by the layering of transparent screens. Views are protected within the residential unit by balcony spaces and deep window boxes.*

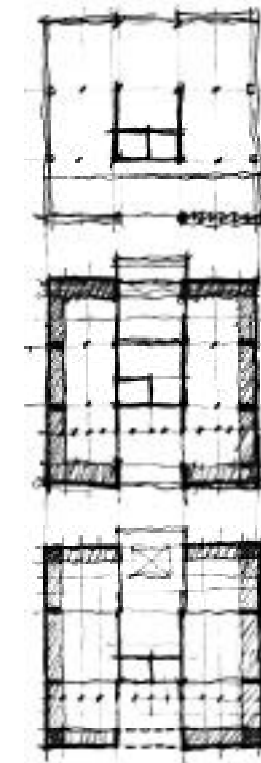
2 Exterior view looking directly into unit, *a maximum of exposure is a ghost like silhouette.*



building order

build•ing *n.* 1. A structure; edifice. 2. The act, process, art or occupation of constructing.¹¹

or•der *n.* 1. A condition of logical or comprehensible arrangement among the separate elements of a group. 2. The state, condition, or disposition of a thing. 3. The existing structures of a given society. 4. A sequence, arrangement, or category of successive things. [*<Lat. ordo.*]¹²



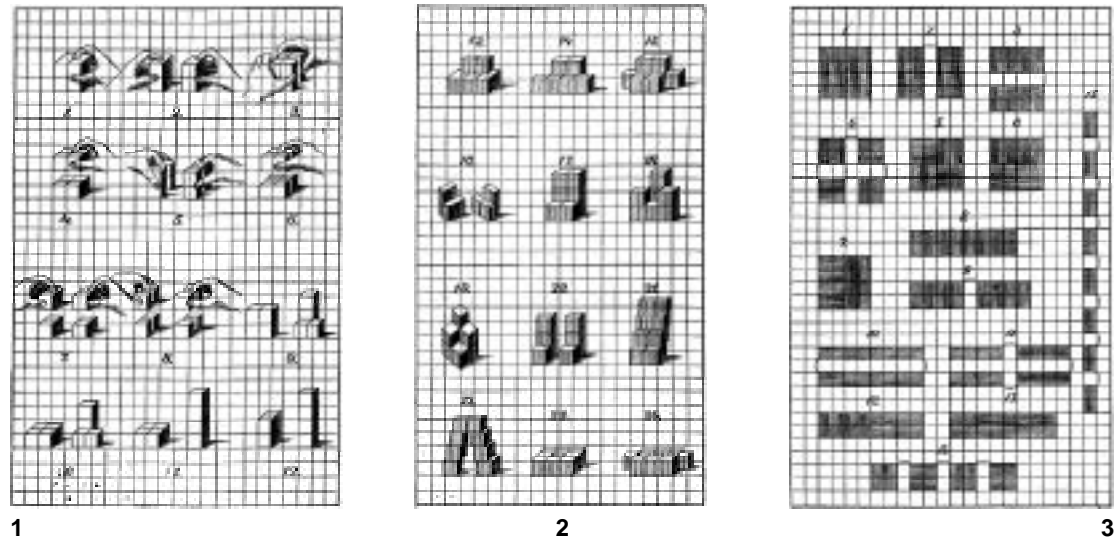
¹⁰ Herman Hertzberger, "Building Order", *VIA 7*, University of PA and MIT Press, (1984), p. 39.

¹¹ *The American Heritage Dictionary*, Dell Publishing Co., Inc., (1983), p. 91.

¹² *The American Heritage Dictionary*, Dell Publishing Co., Inc., (1983), p. 483.

In simple terms, you could say that building order is the unity that arises in a building when the parts taken together determine the whole and, conversely, when the separate parts derive from that whole in an equally logical way. The unity resulting from design that consistently employs this reciprocity may in a sense be regarded as a structure. The material (the information) is chosen on purpose, adapted to suit the requirements of the task in question, and, in principle, the solutions of the various design situations are permutations of or at least directly derived from one another.¹⁰

Herman Hertzberger



they were being taught. The “gardener” (kindergarten teacher) after supplying stimulation and enrichment, was instructed to wait patiently for the developing student to make his own connections and discovery of predictable information.

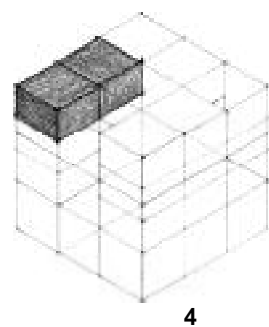
The use of the gifts

All activities were to take place on the kindergarten table top covered with a square grid (preferably scored), ensuring that patterns created on it by the child would not be mere arrangements but, most important from a scientific standpoint, arrangements in space.

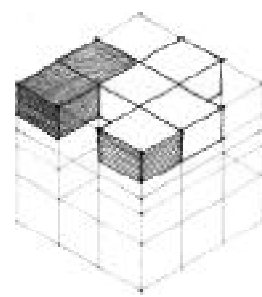
Before beginning his play with this gift the child must apprehend it as a symmetrical whole, complete in itself. If the cubes are arranged in the box and

covered with the lid, it is only necessary to place the box on the table with the cover downward, then to draw out the cover and raise the box with a steady hand. When the box is withdrawn the whole cube with its parts well arranged, stands before the child.

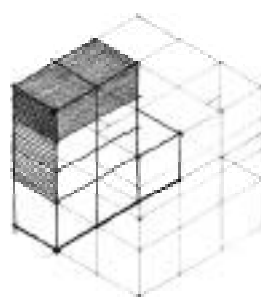
“This procedure is by no means intended merely to make the withdrawal of the box easy for the child, but, on the contrary, brings to him much inner profit. It is well for him to receive his playthings in an orderly manner-not to have them tossed to him as fodder is tossed to animals. It is good for the child to begin his play with the perception of a whole, a simple self-contained unit, and from this unity to develop his representations. Finally, it is essential that the playing child should receive his material so arranged that its various elements are discernible, and that by seeing them his mind may unconsciously form plans for using them.”¹³



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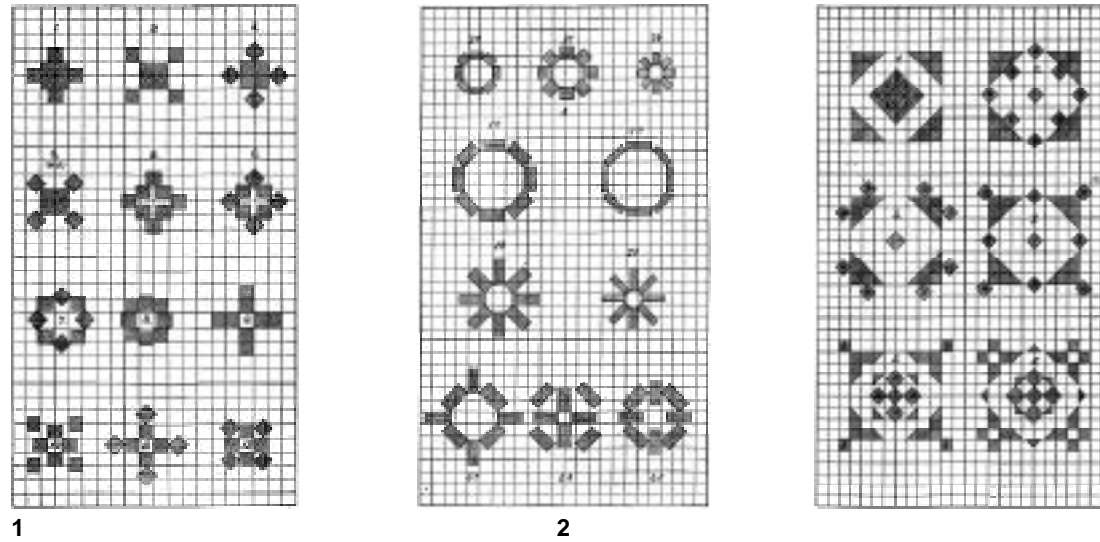
1, 2, 3 Froebel's Gifts, a set of wooden blocks that are disguised as playthings are arranged on a gridded table top. Block forms start at the concrete and move towards the abstract.

4 Residential Unit, the smallest of the building modules. The unit itself occupies two-thirds of the depth of the lot, in an effort to provide an outdoor space per unit and maximize access to natural light.

5 Building Level, a set of 3 residential units form a building level. The units are offset to allow for a central stair tower.

6 Building Unit, a series of 3 residential levels are stacked over a larger retail level.

¹³ Josephine Jarvis, *Friedrich Froebel's Pedagogics of the Kindergarten: or his ideas concerning the play and playthings of the child*, D. Appleton and Company, (1909), p. 00.



For clarification: in Froebelian parlance, materials given in the first half of the program are technically called “gifts”; those given in the second half are called “occupations”. Although all are presented in gift boxes, they have contrasting qualities. Materials for the gifts are performed, retain their form throughout play, and are merely arranged; materials for occupations are relatively formless, appreciably or irreversibly transformed during play, and are used to create forms and patterns.

The first half (the gifts) moves from the concrete toward the abstract, from outer perceptions to inner concepts. It is devoted to analysis; thus the reduction of solids to planes, from planes to their outlines, and lines to their points of termination or intersection. The second half (the occupations) moves from the

abstract toward the concrete, from inner concept toward outer expression. It is devoted to synthesis; thus points are connected to form lines, lines are joined to form planes, planes are folded to form empty solids, empty solids are filled, and filled solids are modeled.

Since the Froebian formula is based upon natural laws, the usual practice of completely destroying old block arrangements before creating new ones is discouraged. Instead, Froebel-trained children would first design a central motif called the “ground form” that remains unchanged as transformations take place around it.

All arrangements made with the gifts and occupations were categorized into three types of forms.

Forms of life, geometric abstractions of familiar objects both natural and man-made.

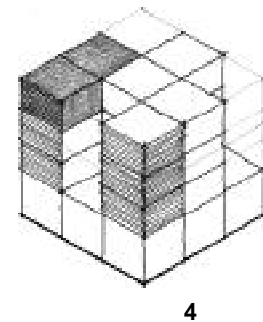
Forms of knowledge, demonstrating the principles of simple mathematics as well as plane and solid geometry, made possible by the graphed table top.

Forms of beauty, arrangements having a seemingly infinite variety of symmetrically and asymmetrically balanced forms.

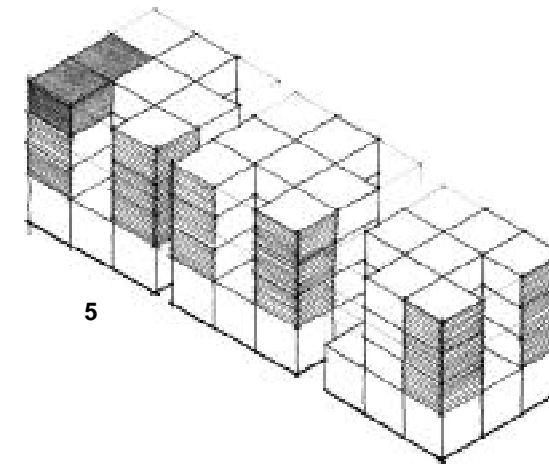
1, 2, 3 Froebel's Gifts, the blocks are arranged to forms of life, forms of knowledge, and forms of beauty.

4 Building, a set of 6 residential units (3 flats and 3-2 story units at upper levels) and up to 3 retail spaces at street level.

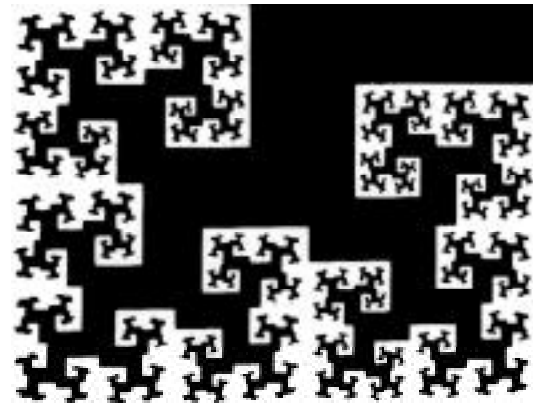
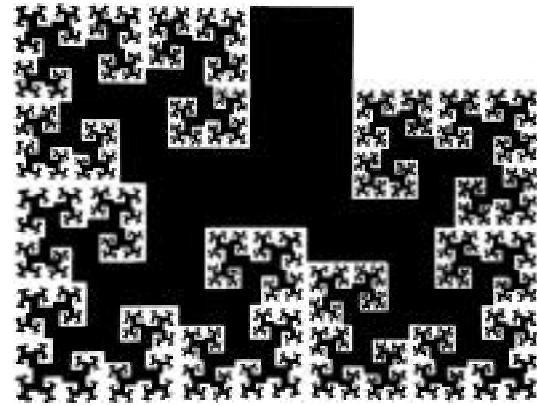
5 Block, a series of 3 buildings fill the site. The third building module is rotated 90 degrees so as to front the Pine Street pedestrian mall. The space between the buildings acts as a service alley at street level and light, ventilation and fire separation at upper levels.



4



5



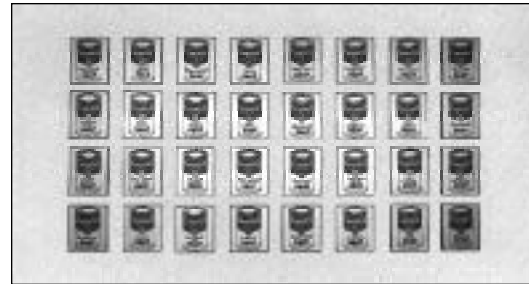
Hertzberger strove to ensure that a building at every stage of construction was continually “complete.” This demands that the part be whole within itself and the whole made up of these discernible pieces. With this notion, he sought to resolve the antagonism between the part and the whole. Hertzberger stated, “by showing how things work, and by bringing them to the surface, the world around us can be read, can be decoded, as it were; architecture must explain, unveil.”¹⁴ That is the parts are interpretable and they help explain the larger part.

This emphasis on making the parts interpretable leads to a clarity and unity of material and building elements that orders the whole, yet the whole is represented by its parts. This gives the “pieces” (the elements) an intrinsic identity to the design.

Conversely, a design that seeks the largest common denominator, the “set” of all the required pieces (i.e., the palette of pieces in its wildest sense), employs a different strategy and demands a fundamentally different outlook from the architect.

1, 2 Fractal Tree Construction, *the parts are directly similar to the larger whole while still having a sense of hierarchy.*

¹⁴ Herman Hertzberger. “The Public Realm,” *Architecture and Urbanism*, (April 1991), p. 18.



1

Andy Warhol invented a new kind of object - **the multiple painting**, which permits the same image to be repeated time and time again, sometimes with shifts in size and color, sometimes not. Silk-screen technology was basic to this kind painting in which Warhol would produce images that are immediately recognizable to us, and repeat them to the point where the figurative components would tend to disappear into a texture.

An architectural application of this figuration to texture is employed by the Swiss architects Herzog and de Meuron. In their apartment building project in Basilea, Suiza; the street facade is made completely of glass and is protected by a cast iron curtain construction that can be folded back piece by piece at will. Wavy light slits lend the curtain construction

a flowing textile-like feeling. While the construction hides the living space behind it, its heavy cast iron material serves as a counterweight protecting against the noisy street side. In form and material, the facade components are related to sewer grates and protective grills placed around trees.

This movable screen veils the facade, resulting in doors and windows that are disfigured, they have disappeared into a texture. Centrality, symmetries and recognizable hierarchies have disappeared to release the power of repetition. This repetitive screen unifies the facade at one scale and relates to the local context at another.

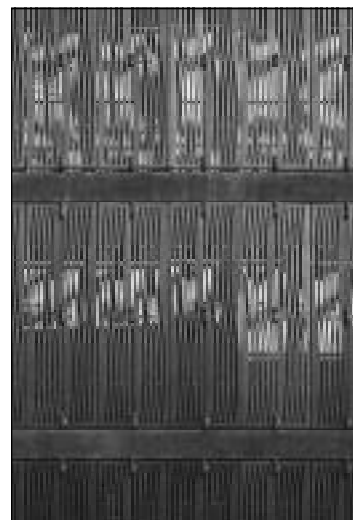


2

1 Andy Warhol, *32 Soup Cans*, 1961-62 Acrylic on canvas, 32 panels each 20 x 16 in.

2 Andy Warhol, *210 Coca-Cola Bottles*, 1962 Oil on canvas, 82 1/2 x 105 in.

3,4 Herzog & de Meuron, *commercial and apartment building*, movable cast-iron curtains screen the interior and allow the facade to change as the desire for privacy changes. In form and material, facade components are related to sewer grates and to the protective grills placed around trees.



4



3

14 order and flexibility

rules and variation

...every artist finds certain visual possibilities before him, to which he is bound. Not everything is possible at all times.¹⁵

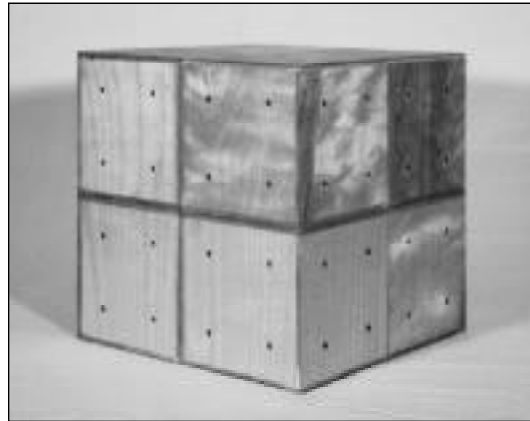
H. Wölfflin

The correct structural theme does not restrict freedom but is actually conducive to freedom.¹⁶

Herman Hertzberger



1



2

The more responsibility users have for an area and consequently the more influence they can exert on it; the more care and love they will prepare to invest in it. And the more suitable the area is for their own specific uses the more they will appropriate it. Thus, users become inhabitants through this process of influence.

Flexibility is central to this idea of allowing one to exert his or her influence on a specific area. It signifies that there is no single solution that is preferable to all others. The flexible plan starts out from the certainty that the correct solution does not exist, because the problem requiring solution is in a permanent state of flux, i.e., it is always temporary. Flexibility therefore represents the sum of all unsuitable solutions of a problem.

The architectural implementation of flexibility is to appropriate space in such a way so that users can feel personally responsible for that space by contributing to it in his or her own way.



3



4

1 8x8 box, the module for a system of storage cubicles

2 Multiple 8x8 boxes, repetition of the initial box.

3,4 Storage cubicles, repetition and variation of the 8x8 box.

¹⁵ Heinrich Wölfflin, *Principles of Art History: The Problem of the Development of Style in Later Art*, trans. M. Hottinger, New York, (1950), p. 11.

¹⁶ Herman Hertzberger. "The Public Realm," *Architecture and Urbanism*, (April 1991), p. 18.