Sara Marini The Butterfly Effect. Punctual Architectural Disturbances for Radical Urban Changes
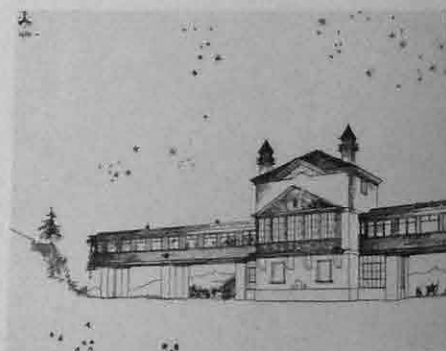
At the annual conference of the American Association for the Advancement of Science held in 1972, the physicist Edward Lorenz presented the theory of the butterfly effect.[1] The question, related to the interpretation of chaos theory, was exemplified by the image of a butterfly beating its wings in Brazil and having a ripple effect that ends up causing a tornado in Texas. Scientifically, the shape of a butterfly's wings coincides with that of a diagram for a chaos system, definable as such if its dynamism is sensitive to the initial conditions (the condition of unpredictability), if evolution is implemented by drawing orbits around attractors (focal points around which the figure of the "wings" is drawn), i.e. if the system is not developed with a trend towards infinity, but rather moves towards specific poles. Lorenz's theory, which fuelled or was fuelled by science fiction,[2] in physics takes the name of "deterministic chaos": we can capture the sense of chaos in a precise drawing that expresses the logic or the non-logic, almost a sort of paranoia that insistently revolves around precise positions.

If the cause of a tornado is the beating of a butterfly's wings, then on the one hand it is possible, if we work backwards and reconstruct the chain of causes and effects, to predict or even avoid the final outcome; on the other, we draw attention to a tiny, ordinary, banal movement, but one that is at the same time so frequent that it seems impossible to establish whether or not and which butterfly will provoke the exceptional meteorological event. Cohabiting within this theory are the weight of reality, with its immanence and peremptoriness, and the liberating power, visionary but dialectic, of the interpretation.

The ingredients: minimum data and extensive effect; the instruments or even the conditioning elements: reality and interpretation; and lastly the structure exposed in this theory, change as a chain of events, are taken into consideration here as the keys and the interpretation of the phenomena that currently invest the territories and thus affect the project.

For some time now, the literature has been insisting on describing a "new" city as a chaotic system, a shapeless and pulviscular one, and its architecture as the main reason for the progressive and "anarchic" occupation of territories. The construction of the urban system, in these descriptions,

1. In the text he wrote for the New York Academy of Sciences in 1963, Edward Lorenz unveiled the theory of the butterfly effect, however, without using this image.
2. Ray Bradbury in "A Sound of Thunder," which is included in the collection *R is for Rocket* (Garden City, Doubleday & Company Inc., 1962), had already delineated some of the basic features of the butterfly effect.
3. In this passage, Ferraris underscores the convergence between a series of texts, from John R. Searle's *The Construction of Social Reality* (1995) to *I limiti dell'interpretazione* (1990) and *Kant e l'ornitorinco* (1997) by Umberto Eco, to indicate the changed role of reality. Maurizio Ferraris, "Il ritorno al pensiero forte," in *La Repubblica*, August 8, 2011, 36-37.
4. "Siamo ancora postmoderni o stiamo per diventare 'neo realisti', ritornando al pensiero forte? Il dibattito filosofico è aperto. Grazie anche al convegno che si terrà a Bonn il prossimo anno sul 'New Realism' a cui parteciperanno, fra gli altri, Umberto Eco e John Searle." Maurizio Ferraris, "Post moderni o neorealisti? L'addio al pensiero debole che divide i filosofi," in *La Repubblica*, August 19, 2011, 48. The end of postmodernism is also witnessed by the exhibition *Postmodernism: Style and Subversion. 1970-1990* (Victoria & Albert Museum di Londra, September 24, 2011 - January 15, 2012).

resembles a tornado of concrete butterflies. The refuge in which to take shelter from this adverse weather, from this hostile "nature" where each point tries to take on positions and adopt autonomous strategies, has often been associated with the definition of collective spaces. Thanks to a new unitary design capable of protecting the whole system, the attempt has often been made to articulate an order that seeks to regulate chaos, to redefine the single building figures thanks to the definition of open spaces equipped so that they bestow a sense to the autonomies. The revision process neither traces nor uses the rationale with which urban chaos is generated: the individual, with his microcosm, is the one who makes up the whole that defines the urban datum, and not vice versa. If we analyze the phenomenon of the building of contemporary cities this reasserts the presence of minute attractors – the imaginary is defined around specific and recurring themes – and swift parabolas of change. Whenever these single buildings must necessarily go back to weighing upon spaces that have already been built up, avoiding occupying places not affected by urbanization, a way of proceeding by throwbacks is triggered between distant situations, and trajectories of changes in the system that are induced and not direct are determined. Based on the theory of the butterfly effect – or on the nature of the exploded city – a chain of events can be triggered by the single object if it, with its own rationale, expresses an interpretation that differs from the contextual datum.

Neorealisms: for a *minor* architecture

"The very fact that, even during those years [the 1990s], we went back to considering aesthetics not as a philosophy of illusion, but as a philosophy of perception, revealed a new openness to the outside world, of a reality that is outside of the conceptual patterns and that is independent of them [...]."[3]

The reigniting of the debate on the end of postmodernism and on the possible return or actual assertion of New Realism[4] involves the modalities of a relationship with givenness and the definition of the project tools. From Nietzsche's theorem "there are no facts, only interpretations," to Derrida's "there is nothing outside

Conceived in 1929 for the San Giacomo Pass in the Alps, Piero Portaluppi's project involved a design for a restaurant housed inside two railway cars hoisted atop concrete pillars and connected by a small three-story chalet with a pitched cement roof. An exemplary episode in the territorial and economic transformation underway at the time in Val Formazza, the Wagristoratore included both a restaurant car and a sleeping car – with red velvet and gilded stucco work furnishings, and in a location that was practically unreachable at the time – that had been raised from the ground. Although the chalet was never built, the presence of the two cars at an altitude of over 2,300 meters was enough to bring the project to fame, with a dislocation of sense and place that was a direct reference to Duchamp's ready-mades. As it was believed during the war years that it might be used as a shelter for the partisans, and therefore dangerous, Wagristoratore was destroyed in 1944.

Piero Portaluppi Wagristoratore

Piero Portaluppi Wagristoratore

the text,"[5] to postmodernism's overlap with the end of ideologies and the "great discourses" sustained by Lyotard, to Venturi, Scott Brown and Izenour's *Learning from Las Vegas*, it is easy to discover how the primacy of the interpretation of reality has marked a way of looking at and making territories and architecture. While New Realism's key words, i.e. ontology, critique, enlightenment, can be traced in Kant's thinking, in his "enlightenment means always daring to do something," or in Eco's *Kant e l'ornitorinco*, where what is real is "a hard core of being," seem to require, in their rediscovery, further applications and articulations in order to establish a true and proper project theory, or perhaps they bring back a new dawn.

The victory of reality over interpretation is witnessed by the discussion that began in regard to the tools used to translate a datum into a project, for example those underlying the term "participation."[6] Faced with a reality that, besides presenting itself necessarily on the scene, seems to increasingly demand the author's disappearance, and therefore the filter of interpretation as well, the architect's role wavers, or in any event it merges into other professions, such as those of the curator or the moderator between public and private. What seems to lie in the rediscovery of the real, understood to be a heeding of the requests for ordinary spaces, is the extreme need to connect datum and text, realism and vision. If we take on the view that the project must necessarily hark back to a contemplation of the existent, on what already exists so as not to uselessly consume other ground and so as not to abandon elsewhere pieces of urbanism by designing a system that reasons, not virtuously, patchily, we essentially accept the thesis that the city can be rethought starting from its most anonymous elements. Reusing does not simply mean taking something and using it in a different way, or moving it; it basically means commenting on what already exists and building correspondences between the object and the system, i.e. it is a rectified ready-made;[7] and therefore it is an absolutely authorial action.

Piero Portaluppi's *Wagristoratore* is an "evident" architecture, the central part is proof of this; at the same time the reuse, to some extent unplanned, of two railway cars – two restaurant cars used as a restaurant, whose dislocation eradicates their innate nature as moving machines – testifies to the possibility that the interpretative datum of the space can involve, without affecting it,

The original building was purchased by a couple that cast aside the idea of demolishing and rebuilding it, and instead accepted the opportunity for a radical intervention that would reorganize the interior spaces, as long as the new arrangement included the surrounding garden as a viable space. The solution was suggested by the manipulation of the model: while the building was being submitted to a process of reduction by gradually demolishing the pre-existing form, the debris produced was used as building materials to make up for the difference in height between the first floor and the outside area and thus set up the new garden.
The introduction of the functional program onto the disconnected volume determines the definition of the façades and adds functional elements that, although not adding to original size, fill the voids, re-establish connections, extend interior surfaces towards the garden, and thus redefine the overall volume. The decision not to use color corresponds to the idea of reduction underlying the design.

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5. The association between Derrida's thinking and architectural research is found in texts by Bernard Tschumi, *Bernard Tschumi: La Case Vide, La Villette 1985*, with essays by Jacques Derrida and Anthony Vidler (London: Architectural Association, 1986) and Jacques Derrida, Peter Eisenman, *Chora L Works* (New York: Monacelli Press, 1997).
6. Suffice it to think, for example, of issue number 948 of *Domus* published in 2011 completely dedicated to open source.
7. Duchamp used the rectified ready-made in cases where the mere dislocation of the object was not enough to change its meaning.
8. The two railway cars used by Portaluppi are anchored to the ground by large white piers, unlike Duchamp's Bicycle Wheel whose mechanism could still produce movement, albeit celibate.
9. The work is included in the catalogue *Pier Paolo Calzolari* (Pistoia: Gli Ori, 2011) for the exhibition of the same name held in Venice, Ca' Pesaro, at the Galleria Internazionale d'Arte Moderna, June 4 - October 30, 2011.

the dogma of givenness. It is the idea of a journey that is consolidated in a static object, an immobile and unchangeable one, the enactment of Duchamp's revolution,[8] where it is not so much the work that emerges in the final results as the reasoning, the difference in meaning. The author uses that difference to sign his or her project; he or she also signs it with their knowledge of construction, but even more so by the imprisoning of what is common inside what is necessary, and elevating it to a form of thinking that is not cynically focused on itself, but rather inclined to trace parabolas of thinking that is not cynically focused on itself, but rather inclined to trace parabolas of thinking elsewhere. The simple repositioning of objects and the new cohabitation with a portion of a "building" undermine all the coordinates, not to determine a moment of perennial instability, but rather to achieve a new balance and to recall the existence of infinite others – other places, other stories. So it is a question of venturing along the path of the project for the city, and of its connecting fabric, beginning from the found object, not with the aim of reducing it to something that is extraordinary, but in order to ponder the norm and its exceptions that can design multitudes, possible changes in trajectory. The definition of new attractors can produce parabolas that intercept *what is left*, that void in the city that has always drawn primary attention, by way of a strategy of circumnavigation and the gradual occupation of real tensions, of concrete and multiple interests. In short, it is a question of overturning the image drawn by Aldo Rossi in *L'Architettura della Città* and even before that in Nolli's plan of Rome: the white parts in the map and the monuments, which are only represented by lines, can be read today as spaces that welcome and await a black definition, the minor city that, more or less silently, is the magma in constant movement.

The iron and the feather: a matter of "restoration"

In Pier Paolo Calzolari's *Senza titolo*, 1980,[9] an iron structure supports a metronome on whose tip a feather draws its rhythmical movement, recording even the minutest changes. Behind the metronome a curtain made up of tobacco leaves hanging on the wall establishes a background where the serial assembly technique and multiple tiny variations in the single pieces further amplify the sense of variation of a system made up of autonomies and transformations. The scene is broken up: the subjects – the mechanism with the feather and canvas of leaves – are exploded on diversified levels, the viewer is assigned

the task of searching for the point of observation, the position needed to sanction interferences and juxtapositions.

"The movement of reciprocity between Painting and the objects facing it, according to Dine, is an attitude that is typical of Calzolari's work over the years; it has often involved, in the enigmatic rapport with Painting, the functions of an existential grammar: the feather, metronome, flame...and toys that move automatically, not as traces of childhood memory, but as creatural patterns that indicate Fate: characters that are exposed, on the edge, on a journey."[10]

The architectural landscape built by Franco Minissi between the 1960s and the 1970s in Piazza Armerina is the confirmation of modernity germinated by the system that interprets, and equips, the Roman structure Villa del Casale.[11] Raised up on the structure, the steel and Perspex structures are substantiated in a changing presence to build a new city that is only apparently inconsistent. The transparent figures record the conditions of the context by giving it a direction: they transform the finding into a museum, they double the plan for the scene: below the findings, above the pattern of routes. The temporal distances that separate the archaeologies from the infrastructure of the present are declared without the doubts that could prove to be ambiguities, yet at the same time they assert the possibility of cohabiting, and not hybridization, founded on the oxymoron of a temporary hospitality (of the new structure and of the visitors) in the permanence of the traces. It isn't just the past that opens up imaginaries: the orchestration of the two architectures implements a propulsive drive towards a future time, it anticipates a minimal movement that, without the help of the feather wouldn't be perceptible. It is the project, the one underneath it and the one that overlooks it and therefore the possibility of what can still be triggered and be enunciated as a protagonist. The loss of the border emphasized by the plastic skies enacts the elements present (the excavation, the memory of absence, the hills with their withered vegetation, the visitors) without emphasizing relations that already exist, but rather directing them towards a new interweaving: through the transparent walls the visitors in the different rooms cross one another in a representation that is totally separate from the rules of two-dimensionality.

Another "philological" reconstruction – whose aim is to repropose the shape of the existing architecture but also to constitute an act of interpretation, dictated by concrete and real motivations – is the "restoration" of an old stable, the *Sch)austall* by naumann.architektur architectural studio. The twin architecture, a new, independent body made of wood, introduced as a double into the old

10. Luciana Rogozinski, "Alborada," in Pier Paolo Calzolari, *Pier Paolo Calzolari. Chi li fece strumento, chi li suona* (Pistoia: Gli Ori, 2011).
11. Currently under way is the replacement of Minissi's work with a new structure that overlooks Villa del Casale, imprisoning it unthinkingly, designating each and every border.

stone structure, retraces its volume, it reproduces it by simplifying it: by removing the difference between the walls and the roof. The "shell" activates new uses, provoking a temporal section between interior and exterior space, once again the crumbling of levels between what persists – in this case the new object or the contemporary transmutation of the memory of the old one – and what must remain to undergo and transcribe motions: what already exists confirms the reality at the mercy of one's own destiny. The original structure is proudly left to waver in the rustling of time, eager to acquire the patina that will bestow it with the dignity of a history, or at least a recording of its vanishment. The same analogical process was behind the creation of Haworth Tompkins' *Dovecote Studio*: the remains of a small fabric, a Victorian dovecote, are witnesses to a tale that cannot and must not be changed – any deviation would act as a precedent for the musem-like transformation of the real: inside the belly of the structure is a stainless steel figure welded in loco and lowered into the original site. It is the phantom of the architecture demolished by disuse. The two texts can continue along independent discourses, parallel in space yet out of sync.

A residential building is commented on by way of the introduction of a wooden tower inside an inner courtyard for lüderwaldt architekten's nec-leo. The tower, which takes on the shape of the existing void, is articulated by small spaces, conceived ad hoc for each floor, so that it is configured like an actual skeleton, a cave-like structure, but one that is overturned; its cavities are exposed, disarticulated in order to interfere with the stories being told. The figure that is introduced, although archetypical, is anti-monumental: made up of nine rooms and spaces in motion, it articulates the three-dimensional development of *La vie mode d'emploie*, a sort of reflected multidirectional of a part of a house reminiscent of the Nineteenth Century.

An archaeological operation, the "discovery" of a house in one that already exists, restores the sense of process or construction or rather of "reduction," which is how Maria Giuseppina Grasso Cannizzo defines her discovery of Casa Parisi Sortino. Between the house and the garden is an ancestral relationship: material that is usually not employed for architecture: debris; the introduction of new presences tailored – indifferent to languages or styles – to a route of progressive revelation: the process is bare. The clients, house, rules of the surroundings become coordinates, and not obstacles, in a journey in search of possible, necessary spaces. The house's non-color tells us that it's still being transformed: it is surrounded by high vegetation, and this appropriation on the

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part of the trees belongs to the path taken. The architecture does not show itself off; rather it houses and gives back stories, it enters into a conversation that has already begun, fully aware that it will continue. The various building phases are crossed by scenes that recount the search for new paths: the house is gutted and perforated in every direction. Unexpected lighting crosses it; the *splitting* is a nod to the work of Gordon Matta-Clark on abandoned buildings, but in this case its purpose is to discover new habitable lands. Before introducing metal seams the house is reduced to a *zero degree text*, inadvertently pointing out the presence of the space. Bruce Nauman fixed, made concrete, real the air under a chair, and Rachel Whiteread's *House*, the concrete cast of a demolished house, called for more attention before an everyday story was erased. Visions that reason on space, the phantom of the possible but intangible, of the insubstantial, the host no doubt of each and every action and movement.

The larva and the butterfly: the backstages of architecture
In 1951 Giancarlo De Carlo decided to go and see how the building he had designed in Sesto San Giovanni was being experienced. "I would spend a few hours on Sunday, in the spring, observing from a café just opposite how the people who lived in my house moved around; I put up with the violence that they used to make it their own; I checked the inaccuracy of my calculations. [...] That was when I realized just how imprecise my foundations had been, despite their rational appearance. The way the house is oriented, the greenery and the light and the fact that a person can be alone, but what counts the most is seeing one another, talking, being together. More than anything else communicating is what counts."[12]
Architectural recycling, just like any form of reuse by virtue of a repositioning of material, meaning, relative positions, substantially builds a story, a tale in progress. You need to know what was there before the project, what

the architect had to choose from and how he worked, the results he achieved and how the work that was done reacts to use, that is if you really want to understand the work that was done. This route is not aimed at sanctifying the past or the present, nor is it meant to open up the confines of skills – great technical skill is required to build a new architecture inside an architecture, you have to listen to the old to be able to shape the new – but rather at revealing how context and architecture, reality and interpretation, can still be used to build cities. It's not a question of reading a fixed point in space, but of following and repeating its pathway, its trace. This need to tell a story is even more obvious when the architecture is declaredly housed by a construction that is already there, and when it translates this asylum into its own intrinsic nature. The need to build an artists' studio where an old bunker rises up, INDEX Architekten's *Bunker Aufstockung*, or the location for a new volume on a disused wharf, OTH's *Kraanspoor*, all lead to the assertion of the yearning to anchor new spaces. It is a question of anchoring and not of sinking roots; roots combine their presence with the soil's, while an anchor is temporarily placed at the bottom of the sea, and at any rate, even this were done forever it would still consist of a lodging and not a compromise. The transformation that is staged, frozen at the moment of its consolidation in connivance between what's useless and what has a new meaning, the disused and the current, eradicates any static value judgement on the here and now: larva and butterfly are captured at the very moment of their transmutation. Index's and OTH's twofold architectures explode in the darkness: both "display cases" are placed at the top of what already exists to light up and show the way, to tell the tales of urban trajectories. Yet architecture really can still travel from one place to another, not because it thinks like a vector or due to its yearning for nomadism, but simply to save itself, because where it was built is no longer of any use or interest. This has recently been the experience of *Lieb House* designed by Robert Venturi and Denise Scott Brown, and of the *Winton Guest House*

This is an ordinary little house with conventional elements used in unexpected and exciting ways. This is a little house with big scale, at home in its context, but also strange and different from the houses around it. It stands up to, rather than ignores, the streetscape of telephone poles. The house incorporates big elements, like the stair that starts out the width of the house and gradually narrows as it rises to the second floor. And it features shingles with imitation wood-grain relief – the traditional indigenous building material of Long Beach Island. In 2009, the property was sold, and the structure was threatened with demolition to make way for a new, larger house. James Venturi, son of Robert Venturi and Denise Scott Brown, led the effort to relocate the structure to an ocean-front location in Glen Cove, NY, where it became a guest house and companion of another house designed by Mr Venturi. Many of the elements which made the house appropriate for its original location – like the views from the living room – benefit it in its new location.

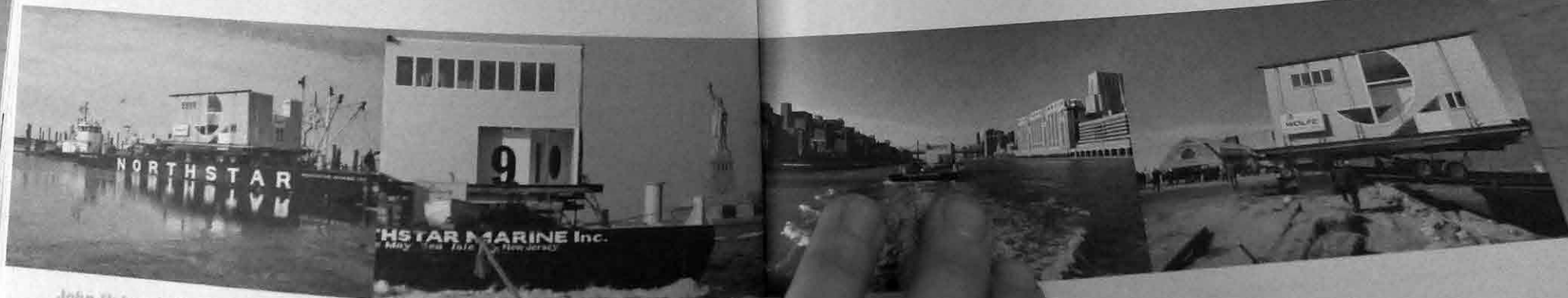**John Halpern, Jim Venturi** Saving Lieb House

by Frank O. Gehry, purchased by the University of St. Thomas. The journey of the former became a document: witnessing the uprooting, the voyage by ship – with Manhattan in the background of this small wooden object – the arrival in the new location and its subsequent implantation means reading a critical text on architecture, on its time, on the sense of context and the destiny of the object, on our memory and on the need to forget as well. The new position doesn't deny the meaning itself of the work because this is implicit, but it no doubt recalibrates it, shifting it by a few degrees; while architecture continues to recount its idea of a house, of truly American houses, of its pure communication and at the same time perennial voyage in search of lands and frontiers. By way of a participative project, which has also witnessed the simulation of the reconstruction on the part of architects and inhabitants of a scale model 1:1 made out of beer cases, the KARO* architectural studio built most of the *Open-Air-Library* with the prefabricated pieces of the façade of a demolished emporium. The pouring of the same module between the two façades – in the warehouse it constituted a minute fabric, but in the new library it resembles a blown-up image of a map enacting a sort of loss of scale – bears witness to a movement of the adaptation of choices, a stage from *In the Country of Last Things*, a proceeding of the project first as a seeker of objects, of fires or attractors, and then as the builder that defines the shape of the parabolas that trace out the trajectories. The new scene is not indebted in terms of the spatial articulation of resistances to invented memories, but only to today's desires, those of the person who will inhabit it, and change it once more. The inventor is asked to translate these desires into spaces, into urban devices – these are the patterns on which the story takes place, the marks that, like in *Dogville*, Lars Von Trier's cinematic version of a drama, persist, even though they are just the choices of the visual field and not of language; the reused passages from the past are called upon whether they want to or not to interpret a new text with no nostalgia.

Arrivals, parabolas, trajectories, focal points

If we go back, *a rebours*, to the theory of the butterfly effect – neither to observe nor to pursue this time, but to write a different fate in the making of cities with architecture – the return of what is real presents itself on the scene like an invitation to follow new notes, distinctive marks that overturn the process of the project. While in *Notes on Conceptual Architecture* Peter Eisenman

13. The reference is to the text by Giorgio Agamben, *Che cos'è l'contemporaneo?* (Rome: Nottetempo, 2008).

established strategies, rationales, theoretical scaffolding to be juxtaposed to the pattern of truth and context, and Rem Koolhaas ironized on the pursuit of writings in order to find projects, pointing to the need to "surf" on the procedure of objects, today these same notes are the expression of reality and not theory, they radically demand a place, a spatial translation from which they can begin again. Just like in physics, the fact that the datum and the phenomenon exist is not enough, the writings of translations, abstractions are needed as well, ones that produce clear figures, shapes, the rationale of restoration, but that can also act as the starting point for new manipulations, new formulas. Proceeding by way of *minor objects* – which offer themselves for the meaning of the system – means tying stories back together without absorbing programs, replicating sites but importing other worlds, with one's gaze turned towards the horizon as it draws liberating and non-obsessive parabolas and false returns, means modifying by transporting external trajectories into obvious ones. The distance between the tiniest movement – the beating of a butterfly's wings – and its repercussions in another place and time is the necessary measure of the breath that each point must sustain in its desire to be the triggering cause of events; it is its absorption of a perception of the contemporary, which may not be given,[13] but which cannot help but be tension, an echo to be pursued, to be injected into that point because only thus can it take part in the urban vortex.

Besides the uselessness and substantial solitude hidden in the capricious exception, neorealisms and modernisms can be born in the mould of sites already occupied, without their influencing with their own reasons the new space as well, allowing the realities introduced therein, reminiscent of feathers even when they are instead made of iron, to restore the changed perception of the concept of permanence, the succession of otherness in the groove of the traces given. The altar of the real does not require visits, tributes and voyeurisms, but rather listening, attention, works, choices, directions that can translate its ubiquitous being into multiplications and the multiple that becomes thunder, a tornado of meaning.

John Halpern, Jim Venturi Saving Lieb House