

New York, December 2007

Choreographed Environments. A Performative Approach to Architecture



by

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Introduction

1.1 Space as Flow

Like choreography, the spaces of our built environment are significantly concerned with the movement of people in and around them. However historically architectural spaces have largely been conceived of, and materialized through, static organizational models that deal more with the idea of permanence and stability rather than that of dynamics and movement. The challenge today is to question these inert models of organization and push towards finding new aesthetic, architectonic, and social patterns that afford novel ways of interacting with our environment.

Without limiting ourselves to the space of the body, I would like to address the possibility for an increased understanding of material space through the study of dance technique and choreography. The question that arises is what is the potential for material disciplines, like architecture, to generate new kinds of territories from the exploration of spatial and structural concepts inherent to dance choreography, and develop them with a new sensitivity towards the natural environment? In other words, can architects push themselves to depart from what the discipline traditionally acknowledged as architectural space in order to explore new territories that take into account the *effects* of movement within an environmental milieu?

In this context, *movement* is not understood purely as an experiential phenomena, but as a grouping of heterogeneous *flows* capable of reshaping our relationship with nature; a *generative technique* for conceiving of architecture and culture not in opposition to nature but as part of one dynamic system of possibilities. The aim of this paper is thus to explore the intersection of Architecture and Dance, in order to increase the potential for innovation, allowing it to exist under new terms; where scientific and technological discoveries can be used to forge a new relationship with the nature.

1.2 Choreography and Architecture

*For us the body is much more than an instrument or a means; it is our expression in the world, the visible form of our intentions. Even our most secret affective movements, ... , help to shape our perception of things.*¹

- Maurice Merleau-Ponty. *The Primacy of Perception.*

For the past few decades performers have been exploring territories outside the boundaries of the stage, bringing their work to natural or architectural settings. This parting from conventional performance space has allowed dancers to explore new possibilities in their craft, where their movements become like extensions –or materialized potentials- of the chosen territory. Early pioneers of this break from the conventional stage can be seen in the seventies with figures like Pina Bausch, Trisha Brown, and Sankai Juku who opened entirely new explorative paths for dancers and choreographers.

Numerous contemporary choreographers are moving beyond the realm of the black box theater to discover the potentials of flow in an unknown territory. Contemporary London-based choreographer, Carol Brown, explores overlaps between architecture and choreography through site-specific work often involving close collaborations with architects. For the thesis of one of her workshops, she writes: *Dance and Architecture have much in common. Both are concerned with practices of space. For a dancer the act of choreography as a writing of place occurs through the unfolding of spatial dimensions through gesture and embodied movement. For the architect space*

is the medium through which form emerges and habitation is constructed. For both, the first space we experience is the space of the body.²

In the first of his ten books on architecture, Vitruvius listed subjects which the architect must study, including among them music and philosophy. It would be interesting to speculate how architecture might be different today if he had added choreography to the list.

1.3 Performative Architecture. Architecture and the Body

*We know nothing about a body until we know what it can do, in other words, what its affects are, how they can or cannot enter into composition with other affects, with the affects of another body.*³
- Gilles Deleuze. A Thousand Plateaus

The body is our physical presence in the world and the means through which we understand our environment, both built and natural. Although it highly conditions our engagement with the world, the interest expressed in this paper lies not so much with the concept of body-centrality in architectural space but rather with the body as it moves through space, enhancing the dynamics of the physical milieu.



“Choreographing Space”

In antiquity the human body was often regarded as a microcosm of universal harmony; with the implied presence of the body in the architectural by figuring as an important metaphor or analogy for the architectural. The dimensioning of columns and rooms were often based on the human figure, extending the perceived harmonious proportions of the human body to those of the architecture. However, this concern for human proportions in relation to the parts and the whole of a building, stress a body-centered conception of our built environment in precise representational terms, without taking into account the way a body *performs* in a built environment or in a particular spatial condition.

Instead of relying on analogy and proportion, sublimating the body to measurement and representation, the aim is to think of the body as a collection of force fields, or vectors, which affect a space through its performance in the space. *Architecture should seek less to be an abstraction of the lineaments of the body and more to engage the body's effective and affective spectrum. It is a faulty assumption that patterning architecture on the body makes it more human, just as it is a faulty assumption that the body is the pattern of the universe.*⁴

The idea of how a body can perform as an extension of the space and the space as an extension of the body's performance (rather than as a representation of it) opens up many more possibilities of proposing something new- something unique emerging out of the immaterial world into the material world of our built environment. The meaning of the body itself has no interest. Instead it gains significance when it is activated by its external connections and *affects*, through what it can do- through its *performance*. Therefore space ceases to be a mere container for the body and becomes an element of an event /performance that includes the body.

This concept of space as an extension of performance, engaging in what the body can do rather than what it represents, ties into what Gilles Deleuze called *impersonal individuation*⁵; one that is distinct from personal individuation, thus dealing with multiple singularities rather than with something particular.

Material/ Immaterial

2.1 Collective Individuality

(...) each individual is an infinite multiplicity, and the whole of Nature is a multiplicity of a perfectly individuated multiplicities.⁶

- Gilles Deleuze. A Thousand Plateaus

The fact that today there is no clear mainstream in art and architecture opens the possibility for both positive creative thinking and for capitalist consumption of the star artist. Lack of mainstream means no categorizations, no classifications and no constraining into a set of rules or correct-to-do's. This liberates the mind, allows for free thinking, experimentation and the possible emergence of new individual potentials.

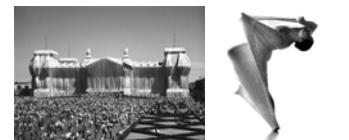
Architecture of the 20th century was dominated by masters of what was known as the *International Style* with figures like Le Corbusier, Mies Van der Rohe and Gropius. Most people, looked up to them as examples to follow and venerate, knowing that they would never achieve such greatness on their own. Those who disagreed with them clearly distinguished themselves as anti-modern, or post-modern; leaving little room for other free-thinking, non-classifiable individuals like Scharoun or Alvar Aalto.

One could argue that the more quantity of individual thinkers there are in architectural theory and practice, the less important the specific individuality becomes in favor of a collective of individuals, where diversity becomes potential. Again, we look to Deleuze's idea of singularity rather than the particular or the essentialist view. It encourages us to think of our practice as a continuous *becoming* rather than a static *being*; opening it up to difference through multiplicity and variation.

Similarly, in his book on Assemblage Theory, Manuel DeLanda makes a clear distinction between Assemblages and Essences.⁷ He argues that that Deleuze's theory of assemblages provides a framework for the study social complexity; connections and relations at all scales, ranging from the individual to the territorial. In other words, assemblages are wholes characterized by relations of exteriority where the whole is much more than the sum of its parts and therefore cannot be reduced to the sum of its parts. Deleuze writes: *What is an assemblage? It is a multiplicity which is made up of heterogeneous terms and which establishes liaisons, relations between them, across ages, sexes and reigns - different natures. Thus the assemblage's only unity is that of a co-functioning: it is a symbiosis*⁸

In the late fifties composer John Cage openly questioned the spatial stability of orchestral configurations and advocated for the physical separation between members of a musical ensemble.⁹ He believed this would give more freedom to each musician, fomenting their individual capacity to generate music and create new musical relations with each other, the audience, and the architectural space that housed them. He wanted to part from the notion of the musical orchestra as an indistinguishable whole and allow instead for the potential of singularities to arise. He broke the ensemble to create an assemblage- a multiplicity of singularities and relations, rather than a fixed space/time configuration or *essence*.

I would like to imagine a way of approaching the practice of architecture as an assemblage rather than an essence. Moving away from the idea of the particular individual or trend, and towards conceiving of it as an assembly of individual multiplicities, singular yet general, that become activated through their performative relations; through *affect and expression*.



Abstracting identity

2.2 Material Expression

During the so called Expressionist period in art and architecture, artists started dealing directly with the transmission of emotion. Although true expressionism was fully liberated with the publication of Freud's work, making complex neuroses and private obsessions acceptable subjects for polite intellectual study and artistic interpretation, this overt expression of feeling, being subjective and at times incoherent rather than objective and precise, opened a period of rich in experimentation. What was particularly significant during this time was how the ephemeral and subjective world of emotions started emerging as physical and material manifestations- as a of collective expression.

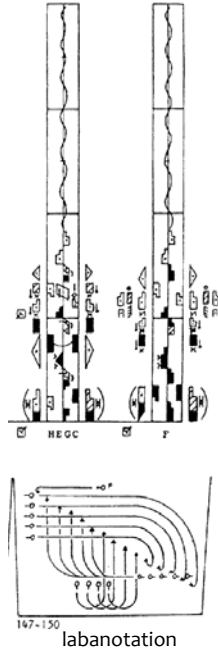
One of the most significant figures in this exploration was movement theorist Rudolf Laban; a German pioneer of modern dance who rejecting the decorative prettiness of ballet in favor of emotional intensity and stark aesthetics. Traditional dance education in Europe had mostly dealt with different combinations of steps, and use of highly polished dance technique. But according to Laban (1976) dance was the expression of movement through flow, and by establishing an array of types of flow (generally categorized under free-flow or bound-flow) a performer could express different physical intensities.

Laban's work is of special interest also because he created *labanotation* which is a system developed for recording- or materializing- human movement. Part of the difficulties in transmitting dance through generations was the inexistence of a universal notation system. Architecture had plans, music had scores, but dance had no material system of transmission. Laban tried to develop a comprehensive way of documenting this ephemeral art and to record every kind of human motion/ emotion, without connecting it to any particular style of dance.

Although it has been used extensively as a notation system, today the tendency is towards using the developments of digital technology, such as Dance Forms¹⁰ started by Merce Cunningham and used as a new technique for, not only notating choreography but also generating it. Interestingly, Cunningham's motive in developing these systems of communicating movement were far removed from those of Laban. In his essay of 1955 called "The Impermanent Art" he advocated for a dance of ideas. *These ideas seem primarily concerned with something being exactly what it is in its time and place, and not its having actual or symbolic reference to other things. A thing is just a thing.*¹¹

Dance for Cunningham was not about conveying a particular emotion or meaning, but about exploring the potential of movement through constant experimentation. He used chance procedures for choreographing seminal pieces, explored complete independence to music, (allowing dance and music to come together only during the performance) and gave minimal information about the dance to his set designers in order to allow them more freedom. He collaborated extensively with composer John Cage and artists Jasper Johns and Robert Rauschenberg who were pioneers of novel techniques in their respective disciplines. Most importantly, Cunningham broke with the idea of dance as a purely body-centric discipline, elaborating conceptual approaches which enhanced movement within a larger global context.

Dance is no longer about a sequence of steps and Architecture is not about a sequence of static spaces. Both disciplines become alive through the continuity of flow and uncontained movement.



2.3 Interdisciplinary Exchange

No art form exists in a vacuum, and undoubtedly social and cultural climates throughout the ages are echoed in the dances and architectures of those years. Likewise it is interesting to question how discoveries in science and developments in philosophy have influenced these arts. However, unlike architecture, dance is a notoriously ephemeral art and as such has few physical records of its history; often existing just through the written words of dance critics.¹²

Architects no longer deal with issues confined purely to architectural practice. In order to describe new directions of work we are finding ourselves borrowing and adopting terminology, as well as techniques, previously only used in Biology (morphogenesis, emergent, generative...) or mathematics (knots, array, computation...).

In the Arts, performers are at the forefront of inter-disciplinary experimentation. Blurring boundaries between dance, theater, architecture and new technologies has allowed choreographers to explore entirely new realms of thought and practice. Similarly, more than ever, the Architect is required to have a panoptic vision that encompasses a wide variety of social, cultural and environmental knowledge, making multidisciplinary work not only relevant but almost necessary in the contemporary world.

Though it is still important for each discipline to contribute within its own expertise, hybridizing a discipline opens a vast array of new conceptual possibilities. Previously un-encountered problems arise from this hybridization, and demand new technical solutions, which must necessarily be economically and environmentally viable.

Architectural form that emerges from studying other disciplines and improving the incorporation of natural resources is inevitably far removed from that which resulted from orthodox academic methods. This principal is the basic motor for the investigation started with this paper, which aims at answering the following question: will a new type of architect, unique yet depersonalized, arise from this interdisciplinary development?

What is clear is that our old instrument of architectural critique needs to be questioned and a new system of aesthetic evaluation in tune with the current context must be implemented. It will be of no use to keep evaluating architectural form with the orthodox rules of proportion, harmony or order. New formal values and techniques must be born from new forms, and hopefully instigate new debates that can open a path towards an ecological culture that blurs boundaries between architecture and the performance of the human body in its environment.

Context

3.1 Abstract operations on Matter

*It is no longer a question of imposing a form upon matter but of elaborating an increasingly rich and consistent material, the better to tap increasingly intense forces. What makes a material increasingly rich is the same as what holds heterogeneities together without their ceasing to be heterogeneous.*¹³

- Gilles Deleuze. A Thousand Plateaus

It is said that during a walk, the nineteenth century painter, James Whistler, stopped impressed with the landscape perspective beyond him. His disciple, seeing that he did not have his drawing utensils, quickly offered him his. But Whistler explained that he purposefully did not have his drawing materials in order to paint the perspective from his memory's impression of the place. The details of the landscape's context were not important to him; it was less about the *particulars* of the landscape and more about the *effect* it had caused him. He seemingly did not want the specifics of the context to cloud a more powerful abstract impression which necessarily had to be guided by a sense of freedom.

Architects are trained to work from documentation of a place; information on its context and history as well as from visits to the site which are in turn documented and recorded. I would like to argue that to avoid a historicist or formal reading of the site's context, architects should not visit the site until well into the development of the project, and if they do they should not document it. Greater levels of freedom can only really be achieved through deeper levels of abstraction. It is truly liberating to visit the site only after having had an *impression* of it through abstract documentation, or through an undocumented -almost Situationist- site visit. This is the only way to avoid the repeated imposition of a supposed contextual or historicist form onto our material environment.

3.2 Environmental contextualism

Visiting a site, spending endless hours on a site prior to designing the form that is to inhabit it- is no guarantee of a more *contextual* project. Rather, at times it can be constraining and reductive if one falls into the trap of taking its formal conditions literally. There can be no such thing as a contextual building- not anymore. But neither is there such a thing as *tabula rasa* or *terrain vague* which the Modernists evoked. We can no longer codify and classify our attitude towards the site as contextual or destructive. There is an in between situation which has much more potential as it takes into account what Deleuze referred to above as the *heterogeneities* of matter (site) and arises from looking at the *forces* of a site, giving way to a new kind of contextualism- one that is driven by a reading of the forces of the environment, whether natural or artificial.

Seen this way, built form becomes contextual in that it exists as a material manifestation which invariably transforms- and is transformed by- its context. When a project is built on a site, neither the site nor the project will ever be the same, a site changes the project and the environment transforms it over time. Our responsibility as *shapers of matter through form* is to understand the very nature of that matter not by imposing form onto it, but by shaping form around its forces. By rethinking the idea of context in relation to the forces which make up that context: to the sun, the wind, the smells, the colors- those immaterial energies that are the new *environmental shapers of form*.

3.4 Site-specific operations on Matter

Choreographers working in new environments, far from the conventional performance space, no longer have total control on lighting and sound effects or even the performance viewing angles. Thus new technical solutions and conceptual approaches must be devised to counteract this lack of control; transforming these difficulties into potentials for innovation.

To illustrate this, one could pick from a large choice of works being produced today under the umbrella of *site-specific* choreography. For instance, a work created by a New York based choreographer, Noemi LaFrance called “Descent”: *performed by twelve female dancers around the architecture of a spiraling stairwell. The audience descends twelve stories to experience an intimate and unpredictable performance.*¹⁴

Here the choreographer controlled the movement of the audience by having them descend in unison with the dancers. These types of site-specific performances and installations attempt to explore human movements within specific man-made environments, through the creation of a new language that hinges on the performative potential of the space, interacting with the site and the audience. Exploring the intersection between the material environment of our physical space and the more immaterial notions of our existence (relating to how we move in physical space) can bring about new ways of *operating* on our built landscape, and imbue our disciplines with enhanced possibilities.



Descent. Sens Production

I am not advocating for a dematerialization of Architecture, however. Quite the contrary. Considering immaterial effects in the production of a material practice, is not at all about ignoring the material per se. It refers more to the conception of a material production. It is about thinking how to make immaterial notions material; ultimately it is about creating material *effects*. Thus it is crucial that we still work within the material and production limitations of each discipline.

Operating on Nature

4.1 Artificial Nature

The plane of consistency of Nature is like an immense Abstract Machine, abstract yet real and individual. (...) There is therefore a unity to the plane of nature, which applies equally to the animate and the inanimate, the artificial and the natural. This plane has nothing to do with a form or a figure, nor with a design or a function. (...) Instead, it is a plane upon which everything is laid out and which is like the intersection of all forms, the machine of all functions¹⁵

- Gilles Deleuze. A Thousand Plateaus

The opposition of nature and culture can no longer be conceived of as a simple dialectic. New ways of thinking and new techniques must be generated to bring architecture closer to nature. Paradoxically this can only be achieved through deeper levels of abstraction. Rather than conceiving of landscape and the building as discrete elements, one could consider them as part of an overall *field* condition; continuous in terms of flow, yet materially different and varied throughout.



Grasscrete Systems

Nature is both dynamic and systemic, and open to temporal transformations. The temporal condition of planning with natural elements has often been disregarded. During Modernism the elements of urban planning were ordered under precise functional qualities and the relationships between these elements were distinct and clearly defined. There was no room for the unexpected both in terms of use (flow) and in terms of temporal transformations (change).

The relatively new term *artificial ecology*, isn't just a new formal expression or a short-lasting fad for the natural. Instead, it has the potential of being a tool for true innovation. Old models have been unable to deal with the growing complexities of the contemporary world as they relate to the changing environment. Thus only by questioning past certainties can we move ahead and evolve in any discipline. We have already seen how radically artists such as John Cage or Merce Cunningham have changed their respective disciplines by questioning deeply rooted givens.

Modernist premises gave us regurgitated models of cities and urban planning that have failed to find spatial solutions to the interwoven social, cultural, environmental, economic and political conditions of our contemporary society. The hope is for a more cohesive and continuous discipline –or *hybrid practice* - to emerge by fusing architecture with landscape and the scientific technologies as well as with larger relational concepts of *flow*.

4.2 New Concepts. Hybrid techniques

[Duchamp discovered] art's profound dependency on and relationship to its physical and intellectual contexts. (...) Concepts were then, and remain today, the primary walking sticks with which we navigate new space and reshape ourselves. There is no reason to deny architecture the power of this extraordinary transformative engine. Concepts are the architecture of hope.¹⁶

- Sanford Kwinter. Architecture As Conceptual Art?

Sensitivity towards nature-oriented policies has shifted technologies from the high-tech experiments, residue of the Modern Movement, towards *hybrid* models where the inception of a new kind of relationship between technique and ecology can be found.

This interaction between the natural and the artificial allows, to a certain degree, for material systems to work in harmony with nature but also for the possibility of nature to work as a material and technical system. Thus new concepts are generated, and terms such as *hybrid technique* and *hybrid materialism* begin to emerge as intertwined concepts necessary for the advancement of contemporary material practices.

Again, the focus here must necessarily be on how a specific material or technique can perform in a given environment, and not what it represents in this or that context. The notion of mixing the natural and the artificial, or using the natural in artificial ways, becomes appealing not for its political correctness (as with the over-used terms “eco” and “green”) but for the vast potential for innovation that such strategies may bring.

The material research which is underway as a result of these energies has produced vastly uneven results. The largely successful incorporation of recycled and recyclable materials, sustainable methods of production and expertise on material efficiency, has been dwarfed by politically motivated ‘good intentions’ where the use of the term *sustainable* justifies less successful aspects of the project, most often related with design responsibility with respect to its cultural and social context



100% recycled domestic waste

4.3 Green Design. A New Kind of Architect

It takes courage today for a designer or an architect, interested primarily in design and aesthetic effects, to tackle the issue of *green-design*. Contemporary design architects in the academic world, will often dismiss the subject, and almost take pride in not understanding sustainable terminology. They justify this skepticism by placing emphasis on novel techniques to generate form and relations, delving into complex computational strategies at the expense of any environmental consideration. These issues that pertain to *the real* get dismissed as banal and unimportant.

On the other hand, a large extent of corporate architecture firms working today justify their lack of design exploration and their altogether banal constructs, by the fact that it is *sustainable*, has passed LEED certification and has a golden star for *green design*. The terminology in this context becomes a *carte blanche* for mediocrity.

There is a generalized conception that green/sustainable design and design innovation are mutually exclusive. Practices at the forefront of design are not tackling the green issue, and practices at the forefront of sustainability are not dealing with design innovation. Thus green design is justifying the lack of design innovation and design innovation is justifying the lack of environmental consciousness.

I would like to argue that the existence of these clashing views demands, from newer generations of designers, a refocused view on the role of the practicing architect and a rethinking of the tools for architectural critique. It demands a new kind of architect, capable of using new information and interdisciplinary collaboration to forge a discipline that is not exclusive, but instead takes on the issue of its performance within the larger environmental context.

4.4 Emergence and Generative techniques.

A body is not defined by the form that determines it nor as a determinate substance of subject ... a body is defined only by (...) the sum total of the material elements belonging to it under given relations of movement and rest, speed and slowness (...); the sum total of the intensive affects it is capable of at a given power or degree of potential (...). Nothing but affects and local movements¹⁷

What tools are necessary to forge new, non-formalist, conceptual and operational approach to design? I believe it is in through the means of both conceiving and operating on the environment that the possibility for innovation can emerge - a way of thinking about the organization of matter which is closely linked to techniques used in dance choreography.

The word emergence in a design context refers to an approach that uses specific generative techniques for flow and form-finding. The design object in this case is not an a-priori target to be achieved, but one to be discovered or found. It does not start with a determined particular form, but with a series of *actions* that define operations (or ways of operating on the material world) through which form can be generated.

The concept of emergence in both Choreography and Architecture deals with the notion of complex systems coming about from the interaction of its multiple components (dancers/ material systems). Thus the whole is not equal to the sum of its parts because the idea of flow is so intrinsic to the organization of these parts. The emergence of new spatial possibilities lies in the ability to manage these complex *flows*, which in the context of Deleuzian thought can be referred to as *assemblages*.

For instance, when looking at a flock of birds or schools of fish one can devise intricate patterns emerging from the constantly changing interaction between each component of the flock or school. Pedestrian or traffic flows also have this capacity for emergent organizational patterns. Indeed, both choreography and architecture deal with the organization and configuration of bodies and energies (not necessarily human) in space and time. How can we resolve the complexity that architectural systems, flows or assemblages inevitably demand?

By exploring and experimenting with generative techniques on matter (that take into account the *performance* of the material and not what it represents or symbolizes) one can delve into unknown territories defined by a bottom-up approach to design rather than a preconceived idea of form. Thus the architectural design process becomes more open and dynamic, resulting in a continuous fold and layering of events which occur within a spatial continuum. Through movement, architecture has the capacity of modulating space in varying ways, constantly transforming our body's relationship with it and its environmental context.

Conclusion

The Limitation of Dualities

*Perception will no longer reside in the relation between a subject and an object, but rather in the movement serving as the limit of that relation, in the period associated with the subject and object. Perception will confront its own limit; it will be in the midst of things, throughout its own proximity, (..) the passage from one to the other: Look only at the movements.*¹⁸

In order to continue to operate on our physical environment there two important dialectical relationships that need to be questioned and dissolved. The first are the static organizational models architects use to operate on matter versus the dynamic notions of matter's *performance* within a given material context. The second is the historically opposing relationship between nature and culture, which has forced us to conceive of our spaces as purely body-centric and devoid of other relational considerations. It is only by looking at relationships of flow that we can begin to shed preconceived static notions of architectural practice and work towards forging a new kind of dialogue between the built and the natural, the static and the dynamic.

These ideas tie into the Deleuzian concept of 'plane of immanence':

*There are only relations of movement and rest, speed and slowness between unformed elements, or at least between elements that are relatively unformed, molecules and particles of all kind. There are only haecceities, affects, subjectless individuations that constitute collective assemblages.*¹⁹

Architecture no longer consists of making building and Dance no longer consists of making dances. The hope is that as dancers continue to explore new territories as managers of space, architects too can conceive of space as managers of movement. In this view, what brings the disciplines of Architecture and Dance together is a new conception of the natural environment and a new way of operating on it that sheds all suppositions that culture is an opposing force of nature.

Notes

- ¹ Maurice Merleau-Ponty. *The Primacy of Perception*, p.5
- ² Carol Brown, choreographer, www.carolbrowndances.com
- ³ Deleuze and Guattari. *A Thousand Plateaus*, p.257
- ⁴ Reiser + Umemoto. *Atlas Of Novel Tectonics*, p.85
- ⁵ Gilles Deleuze. *Difference and Repetition*, p.277
- ⁶ Deleuze and Guattari. *A Thousand Plateaus*, p.254
- ⁷ Manuel DeLanda. *A New Philosophy of Society*, pp.26-46
- ⁸ *Ibid.*, p.121
- ⁹ John Cage. "Composition as Process Part II: Indeterminacy" (1958)
- ¹⁰ Merce Cunningham, choreographer. www.merce.org
- ¹¹ Merce Cuningham. *The Impermanent Art* (1955)
- ¹² Deborah Jowitt. *Time and the Dancing Image*, p.7
- ¹³ Deleuze and Guattari. *A Thousand Plateaus*, p.329
- ¹⁴ Noemi LaFrance, choreographer, www.sensproduction.org
- ¹⁵ Deleuze and Guattari. *A Thousand Plateaus*, p.254
- ¹⁶ Sanford Kwinter. *Architecture As Conceptual Art?* Harvard Design Magazine #19, p.4
- ¹⁷ Deleuze and Guattari. *A Thousand Plateaus*, p.260
- ¹⁸ *Ibid.*, p.282
- ¹⁹ *Ibid.*, p.266

Bibliography

Ball, Philip. *The Self-Made Tapestry. Pattern Formation in Nature*. Oxford: Oxford University Press, 1999

Cage, John. "Composition as Process Part II: Indeterminacy." In *Theories and Documents of Contemporary Art*, eds. Kristine Stiles & Peter Selz. California: University of California Press, 1996

Cunningham, Merce. "The Impermanent Art" In *Merce Cunningham: Fifty Years*, ed. David Vaughan. New York: Aperture, 1997

DeLanda, Manuel. *A New Philosophy of Society*. New York: Continuum, 2006

DeLanda, Manuel. *Intensive Science & Virtual Philosophy*. New York: Continuum, 2002

Deleuze, Gilles & Guattari, Felix. *A Thousand Plateaus*. trans. Brian Massumi. Minneapolis: University of Minnesota Press, 1987.

Drabe, Natascha, ed. *Refuse. Making the most of what we have*. Utrecht: Cultural Connections, 1996

Deleuze, Gilles. *Difference and Repetition*. trans. Paul Patton. New York: Columbia University Press, 1968

Deleuze, Gilles. "The Fold-Leibniz and the Baroque. The Pleats of Matter." In *Folding in Architecture, Architectural Design*. Ed. Andreas Papadakis. London: Academy Editions, 1993

Jowitt, Deborah. *Time and the Dancing Image*. California: University of California Press, 1988.

Kwinter, Sanford. "Architecture As Conceptual Art? The Architecture of Hope. Difficulty and Innovation." In *Harvard Design Magazine #19*, Fall 2003/Winter 2004

Merleau-Ponty, Maurice. *The Primacy of Perception*. United States: Northwestern University Press, Studies in Phenomenology and Existential Philosophy, 1964

Mostafavi, Mohesen and Naijle, Ciro, eds. *Landscape Urbanism*. London: AA Print Studio, 2003

Reiser+Umemoto. *Atlas Of Novel Tectonics*. New York: Princeton Architectural Press, 2003

Soriano, Federico. *Sin_Tesis*. Barcelona: Gustavo Gili SA, 2004

Smithson, Robert. "The Dialectical Landscape". *The Collected Writings*. California: University of California Press, 1996

Valery, Paul. "Philosophy of the Dance" In *Aesthetics*, trans. Ralph Manheim (Vol. 13 of The Collected Works). New York: Pantheon Books, 1964

Illustration Credits

Choreographing Space, e+i architecture. Photo Brandon Jacobs-Mills: cover & p.2

Christo and Jean-Claude , Reichstag. <http://prelectur.stanford.edu/lecturers/christo>: p.3

Louis Greenfield, calendar image: p.3

Labanotation , www.updatecenter.britannica.com: p.4

Descent. Sens Production, Noemi LaFrance: p.7

Grasscrete Systems, www.arcacat.com/arcacatcos/cos30/arc30995.html: p.8

Cubic room, in *Refuse. Making the most of what we have*, p155: p.9