AN INQUIRY ON THE LIMITS OF MULTIDISCIPLINARY COLLABORATION IN DESIGN: ARCHITECTURAL COMPETITIONS

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ABSTRACT

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Architecture both as a field of knowledge and profession had always been an outcome of multidisciplinary collaboration. The limits of this collaboration are directly effective on both the method of design and the end product itself. In contemporary modern architecture, this interaction between architecture and other disciplines reached to an altered mode where design strategies became open to transformations

and the traditional understanding of design replaced with alternative approaches.

This thesis aims to understand the limits of multidisciplinary collaboration and altered mode of design under the contemporary context. Architectural design competitions will be a major case study area towards understanding disciplinary transparencies and their impact on design process. Under this framework the study questions the limits of continuity between architecture and other disciplines as transformative power of each other.

KEY WORDS: multidisciplinary design, multidisciplinary collaboration, architectural design competitions

ÖZ

TASARIMDA DİSİPLİNLER ARASI İŞBİRLİĞİNİN LİMİTLERİ ÜZERİNE BİR ARAŞTIRMA: MİMARİ YARIŞMALAR

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Mimarlık hem bir bilgi alanı hem de meslek olarak her zaman disiplinlerarası bir işbirliğinin ürünü olmuştur. Bu işbirliğinin limitleri tasarımın metodu ve ürünün son hali üzerinde doğrudan etkilidir. Çağdaş modern mimaride, diğer disiplinler ve mimarlık arasındaki bu etkileşim, tasarım stratejilerinin dönüşüme açık olduğu ve geleneksel tasarım

anlayışının alternatif yaklaşımlarla yer değiştirdiği bir duruma dönüşmüştür.

Bu tezin amacı, disiplinlerarası işbirliğinin sınırlarının ve çağdaş bağlamda tasarlama usulünün değişmiş biçiminin anlaşılmasıdır. Mimari tasarım yarışmaları, disiplinlerle ilgili saydamlaşmaları ve onların tasarım süreci üzerindeki etkilerini anlamada büyük bir çalışma alanı oluşturacaktır. Bu çerçevede çalışma, mimarlık ve diğer disiplinler arası karşılıklı dönüşüm gücü sürekliliğin sınırlarını sorgulamaktadır.

ANAHTAR KELİMELER: disiplinlerarası tasarım, disiplinlerarası işbirliği, mimari tasarım yarışmaları

To My Family
In eternal gratitude

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CHAPTER 1

INTRODUCTION

1.1. Problem Definition

The internal structure of architecture, both as a field of knowledge and profession, has always been interacting with external disciplinary sources. Some of the sources, which architecture continually adds new ones as well as the existing ones dependent on the change of the conditions of the period and the specific characteristics of the design topic are history, technology, sociology, art, etc.

Specialization process, which is observed in the intellectual system for more detailed and refined information, in the last six to seven decades led the architecture to emerge new design disciplines, which are previously institutionalized by architecture then by themselves. These design disciplines are city planning, landscape architecture, industrial design, interior architecture, etc.

By the gradual development of the design disciplines architecture started to gain them as new sources as well as its existing external ones. As a result of this, ‘contemporary multidisciplinary

collaboration medium' in design domain has emerged. In it architecture plays a major role and the other design disciplines take the ancillary and complementary parts.

At the beginning of 21st century within the framework of multidisciplinary collaboration in design domain, architecture has just started to be faced with an altered situation. 'Contemporary multidisciplinary collaboration medium', in which architecture is at the center and other design disciplines take ancillary and complementary parts associated with the progress degree reached by the design disciplines, has started to be shifted to a new direction. Different from the previous one, in the 'new multidisciplinary collaboration medium' the major role recedes from architecture and all design disciplines become as participants of the design process. As a result of this, interaction between design disciplines and architecture has started to appear and then reciprocal transformations have occurred. The above-mentioned shift in the multidisciplinary collaboration medium emerges as the topic needs to be examined and comprehended precisely.

1.2. Scope of the Thesis

The shift that occurs within the framework of the multidisciplinary collaboration in design domain gives way to transformations in the design process and the relationships of the design disciplines and end products itself.

In terms of contemporary design process, mostly observed design in diverse periods has transformed into synchronized design. The synchronized design leads to the shift from taking design

decisions on separate periods being independent from one another to taking decisions together.

In terms of design discipline relations, limited and indirect communication possibilities of design disciplines have transformed into direct communication possibilities. Direct communication possibilities lead the transformation of uncommunicative state of the design disciplines' doctrines to the communicative one.

The above-mentioned transformations in design domain define an entirely 'new multidisciplinary collaboration medium'. This 'new multidisciplinary collaboration medium' in the design domain provides the possibility to transform design methods and then cause new design understandings to come out.

1.3. Research Method

Transformation scope of the new medium of the multidisciplinary collaboration in design domain has started to be observed in comprehensive and complex projects and particularly in the field of the architectural design competitions. Architectural competitions are chosen as a case study because of their unique flexible characteristics that present an environment where above-mentioned discussion can be perceived precisely.

These characteristics are:

- Soften restrictive factors concerning employer and budget.

- Disciplinary collaboration as an advance condition in a certain extent.
- Flexible use of architectural program.
- Institutional support in a certain extent.

Within the above-mentioned framework the following path has been observed throughout the thesis research:

In the first part of the thesis a literature survey is made in order to obtain the sources of multidisciplinary understanding in design domain. In this regard S. J. Kline's philosophical and technical approach for general intellectual system has been probed into. Secondly, discourses developed during the discussions made in the conference named 'Einstein meets Magritte', which was held in Brussels in 1995, are examined in detail.

As the second part of the thesis based on the first one the historical process of the multidisciplinary collaboration in design domain is reviewed. In this regard developed approaches of L. Krier and Archigram are reviewed within the multidisciplinary collaboration framework. Afterwards, in the light of the historical review of the design domain overlapping basis of the inputs gained from the first part is prepared. Then, by overlapping inputs gained from the first part to the design domain proposal of 'processive framework of multidisciplinary collaboration in design domain' is materialized.

As the third part of the thesis, analyses are made on the sample urban design competitions within the materialized framework to discover the altered mode of multidisciplinary collaboration in design

domain.[1] In this regard to elaborate the different steps of altered mode of the multidisciplinary collaboration in design domain İstanbul, Gaziosmanpaşa Architecture - Urban Design Competition (2004), Paris, Urban Rearrangement of the Les Halles District (1st Stage) (2003 – 2004) and New York, High Line (1st Stage) (2004) competitions are analyzed.

As the last part of the thesis research, results of the analyses made on sample competitions are evaluated in order to comprehend the new and contemporary roles of multidisciplinary collaboration in design domain. Then, by reviewing these roles future trajectory of the multidisciplinary collaboration in design domain is aimed at being determined.

[1] As part of the thesis research, the author has had experienced project competition processes as a participant to many competitions, in teams formed of architects, city planners, landscape architects, sculptors, and interior designers, since 1995. Some of these experiences have been awarded varying from citations to 1st prize.

CHAPTER 2

SOURCES OF MULTIDISCIPLINARY UNDERSTANDING IN DESIGN

The ‘intellectual system’ whose foundation has been laid and developed until today by the modern world, which we use to understand the world and ourselves has been so effective. This can be perceived when we consider what have been done and gained within a short period of time such as 400 – 500 years.

S. J. Kline explains what underlies this efficiency as follows:

> This gain in understanding has arisen primarily from two sources. We have adopted what we loosely call ‘scientific methods’, and we have broken the intellectual enterprise into a larger and larger numbers of parts (disciplines and research programmes). We have created working groups of scholars who study each of the parts in as ‘scientific’ a method as they can bring to bear [Kline, 1995: 1].

The efficiency of intellectual system has started to be blurred with the arising of current issues being noticed by today’s researchers in collective manner. S. J. Kline, with the map of the United States metaphor, summarizes the current situation of the generality of the

intellectual system today and the way out that can ensure that it can get out of this situation.

> For at least a century, we have acted as if the unconnected major fragments of our knowledge, which we call disciplines, could by themselves give understanding of the emergent ideas that come from putting the concepts and results together. It is much as if we tried to understand and teach the geography of the 48 contiguous states of the United States by handing out maps of the 48 states, but never took the trouble to assemble a map of the country. No one questions the importance of the map of the country even when state maps exist. Nor do people questions our ability to assemble a map of the country as a whole. We do not question our ability to form the map of the whole because we know a map of the country fulfills two conditions: first, it does not contain all the details that 48 maps of the 48 states provide; second, we make sure that the overall map does not do violence to the symbols, boundaries, or details of the 48 state maps [Kline, 1995: 4].

To him, the reason for these problems is embedded in the understanding of the operation method and limits of human mental system and results of these current issues are discussed below.

From the onset, every discipline creates new (sub) disciplines through the process of mono-directional operating fragmentation. This very productive and rational attitude has provided an unbelievable accumulation of knowledge for intellectual system. Difficulties in control, that are more strengthened by the mono-directionally operating fragmentation process, brought by the gradually expanding accumulation of knowledge in the intellectual system have also given rise to abstraction among (sub)disciplines. Disciplines and arising (sub) disciplines; disconnected from the other (sub) disciplines around them

causes every (sub) discipline to create domain descriptions and truth / value concepts researches and form their own shells. This shell formation causes broken relationships in the intellectual system. Then, broken relationships create the following problems with them:

- Ever-increasing attitude of alienation and abstraction causes every (sub) discipline to get away from the fact that they have to be a part of a whole. The margins in continuation come out isolated (sub) disciplines whose reasons for existence cannot be controlled.

- Broken relationships cause the domain descriptions and truth / value concepts to be broken up. This creates an environment that prevents a convergence in the common denominator in common issues with it.

Kline emphasizes these problems in that;

> As long as individual disciplines maintain the view that only *members of the club* understand the contents of *my* discipline, and hence the views of *outsiders* with respect to *my* discipline should be ignored (or at least severely discounted), the problem is not soluble [Kline, 1995: 284].

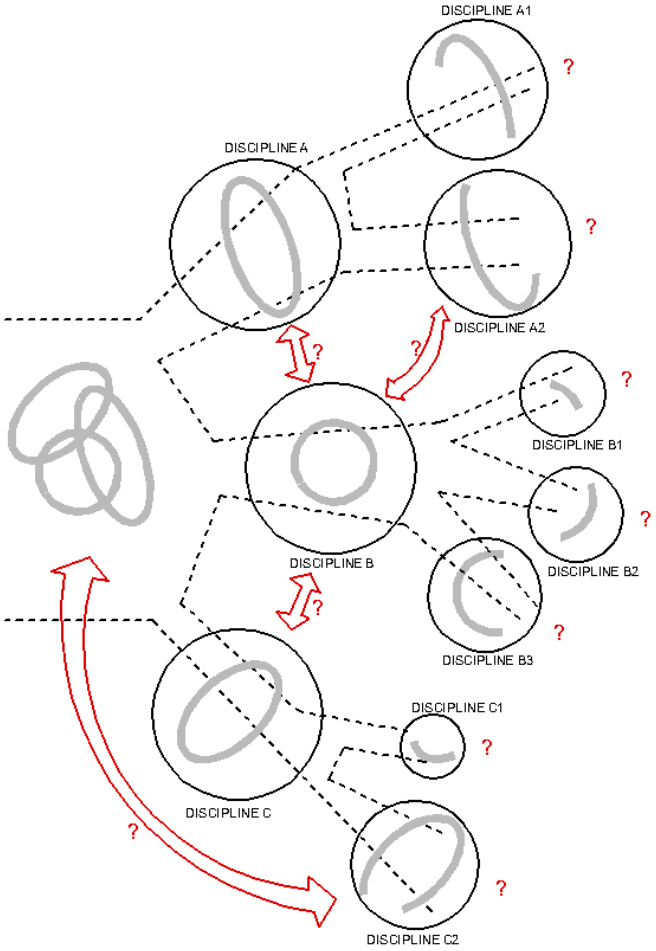

Figure 1 Sources of interdisciplinary dialogue in the intellectual system, Günay Erdem, 2005

2.1. Emergence of Multidisciplinary Concept

As a method, S. J. Kline indicates that the way out of the bottleneck that intellectual system is stuck in is hidden in the basic principles of the perception method (from the most simple to the most complex one) of human beings at all levels.

We create representations of what we see around and about us by reflecting them through a mirror in our minds. Through our mind we

carry out the following operations in an order as a procedure of the basic reflex of the reflection operation.

First of all, we disassemble the whole into pieces. We separately reflect these pieces through the mirror in our mind and create their mental representations. Then, we reassemble the mental representations, created as a result of these separate reflections, and we obtain our real target of mental representation of the whole. [Kline, 1995]

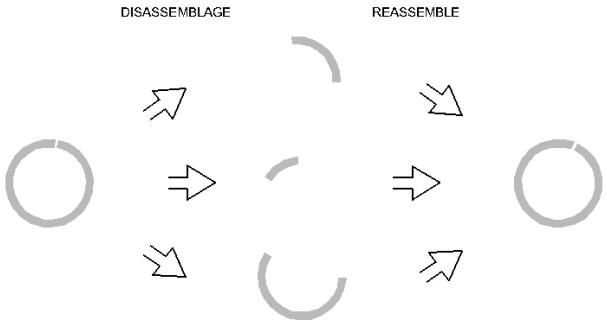

Figure 2 Basic individual perception procedure, Günay Erdem, 2005

It will be possible to accurately get the whole in the upper levels (at the level of disciplines) by the way of making the reassemble process functional at the level of disciplines too, which we carry out by default at simple levels. In other words, in order to form the whole, which is our real and original target, we accurately bring together complicated mental representations, as a result of the rather complicated reflections we have made at the level of disciplines. [Kline, 1995]

This brings the proposal that we have to operate the mono-directional information flow, which is caused by the fragmentation

process, in reverse in the intellectual system and this directly indicates multidisciplinary interaction / dialogue.

Processive extension of multidisciplinary interaction / dialogue can be made as in the following successive manners:

- Communication between different disciplines occurs.
- Communication between disciplines leads interaction.
- Interaction between disciplines introduces restructuring in them.
- As a result of restructuring clarification in the relationships between disciplines occurs.
    - The clarification of the relations of the disciplines surrounded by the other ones.
    - The clarification of the roles of each discipline for entirety.

Multidisciplinary interaction / dialogue process causes the following gains for intellectual system:

- Defined and clarified discipline relations lead to avoid compartmentalization in the intellectual system.
- Defined and clarified discipline relations lead to the continuity in the particular domain.

- The provision of continuity in disciplines surrounded by the other ones.
- The provision of continuity for each discipline together with the main objective.

- The accomplishment of the continuity in the particular domain causes affirmative contribution as a matter of wholeness.

2.1.1. Emerging Properties in the Intellectual System

The situation arising with the bi-directional (disassemble and reassemble) functioning of the process in the intellectual system, assuming the role of a control mechanism creates the potential for an opportunity to question, discuss or challenge the truth / value concepts and domain limits that each discipline possesses, and remove any shields each one has. With this intervention, it offers us to upgrade the existing structure and protect intellectual system from the bottleneck it has been stuck, utilizing the available structure of existing intellectual system. [Kline, 1995]

Following properties emerge:

- Creating possibilities of overview for interdisciplinary relationship and generality of disciplines.

- Potential to discover the missing areas of intellectual terrain.

- Adding new dimensions to our existing accumulation of knowledge.

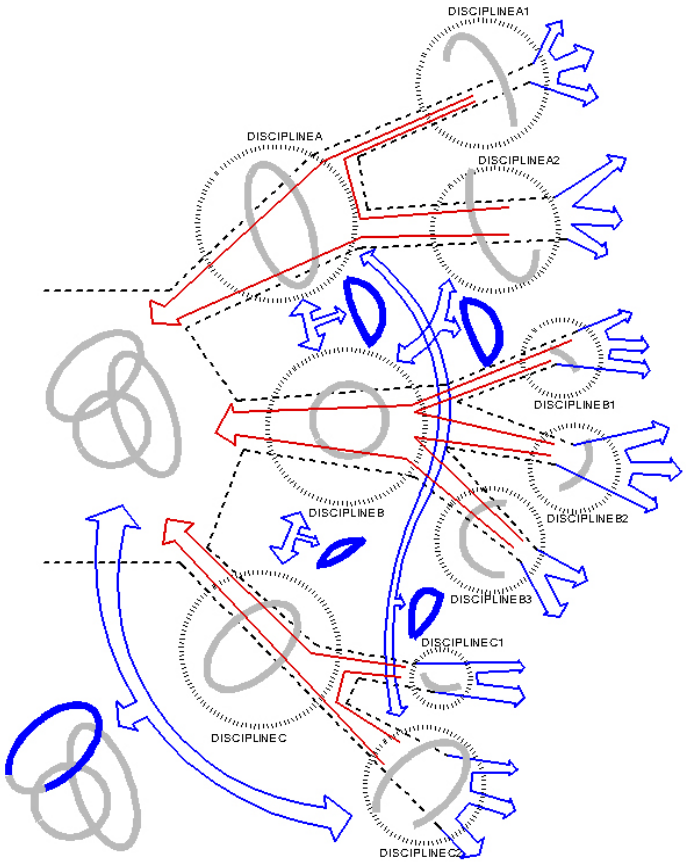

Figure 3 Affect of interdisciplinary dialogue in the intellectual system, Günay Erdem, 2005

2.2. Communication in the Intellectual System

The strength of gains depends on the depth level of communication between disciplines. Deeper communication causes deeper interaction. Deeper interaction causes deeper restructurings in the disciplines.

The determinant with key importance that starts and provides the continuity in summarized procedure is 'communication'. Provision of 'continuing communication' in the whole intellectual system is technically impossible because of the intellectual system's reason for emergence that generates dilemma; struggle to perceive more complex information than individual perception can do, but within the technical limits of it.[2]

S. J. Kline brings forward Freud's 'projection' terminology to elaborate the topic 'communication of disciplines'. He elaborates projection in his multidisciplinary discussion as struggle to perceive the other discipline's 'schemata' [3] within the limited grounds of 'schemata' we have.

In the continuation of this approach he emphasizes the following situation; 'Projections' may be very helpful tools in perceiving the closer

[2] Many important studies were developed about the technical limits and working procedures of human mind that default limits communication of disciplines. For example: Miller's many times verified documentations about the capacity of our short term memory. Simon made further step about the processing ability amount of meaningful chunks of information of human mind. Dennet made another important step with his proposal 'working memory is able to process data in a linear or serial manner'.

[3] S. J. Kline developed the terminology 'schemata' to elaborate mental representations. He grouped them as 'simple schemata', 'moderately complex schemata' and 'relatively complex schemata' to discuss different complex form of mental representations. Varying from very simple routines necessary for surviving, to the complex ones where disciplinary knowledge emerges.

surrounding disciplines because of resemblance of ‘schemata’ they possesses, but trying to perceive faraway ones with the completely different ‘schemata’ structuring may lead to illusions. [Kline, 1995: 44-45]

2.3. Far End of the Communication in the Intellectual System: Art and Science Relationship

Discussion of the communication between the different disciplinary domains in the intellectual system leads the thesis research to legendary art and science debate. Art and science debate becomes inclusive part of the general scope of the thesis because of the following reasons. Firstly, the debate comes within the scope of the previously mentioned discussion as the most complicated element. Secondly, debate is directly related to architecture’s internal structuring.

Relationship of art and science has always been placed in the agenda of the researchers. In spring of 1995, an international interdisciplinary conference titled ‘Einstein meets Magritte’ was held in Brussels. In this conference, held in the eve of the third millennium, scientists and artists have come together for the purpose of finding a meaningful key about deep nature of reality, the knowledge and skill of humankind.

D. M. Lechner’s approach differing from the other approaches presented in the conference, tries to develop new viewpoint to the debate. He tries to look from outside and concentrates his energy on finding a solid ground for the debate. [Lechner, 1995: 1]

According to Lechner's proposal, due to the major gulf instituted by modern epistemological and metaphysical tradition between the human and nature, subject and object, inner and outer, the relationship between science and art has needlessly become problematic. If the above-mentioned dichotomies are considered true, it may be unassailable to talk about humans and their relationship with the nature. This reveals the strict divorce between science and art. As a continuation of this thinking in the logical sense, art is positioned on the human side as it deals with the inner world, whereas science is positioned on the other side as it deals with the outer world. [Lechner, 1995: 2]

For Lechner, the solution of the problem again lies in the point where the problem starts and the discussion may be more productive starting again there. To him, there is a third way instead of choosing one of these dichotomies and looking at the discussion from the chosen side.

> Departing from a conception of subject and object, of man and nature, as a primary unit, science can be seen to have its origin, just like art, in primary experience. The question of the relationship of science and art then no longer needs to be conceived as a problem of how to reunite two different epistemological and metaphysical realms. The question becomes a much more interesting one: when and how in the process of the refinement of primary experience do science and art arising? This is not a question of epistemology, nor of metaphysics, but of edification [Lechner, 1995: 1].

As long as we look at the discussion from the existing construction, it becomes, in Lechner's words "The relationship of

science and art is just as mysterious and complex as the relationship of sports and art, or as that of sports and politics" [Lechner, 1995: 1]. To him, problems and chaos arise as long as our efforts to understand the differences between art and science have epistemological and metaphysical origins. To Lechner, science and art are designed as fundamentally disparate metaphysical realms and are assigned as basically distinct epistemological statuses. As a continuation of this view, D. M. Lechner puts the condition that the differences between art and science have to be seen as differences between two separate cultural domains in order that the bridgeable basis of the gap between these two domains may form.

> …Once we have stripped the reflection upon the relationship of science and art from its epistemological and metaphysical embedding, we will not make so much of a problem of this relationship [Lechner, 1995: 2].

D. M. Lechner constructs and summarizes his views depending on the philosophers' views like Litt and Deawey concerning "primary experience".

> When we are on the beach we feel the sunlight and the heat of the sand; we hear the sounds of the waves; we see the sea and the ships at the horizon. This kind of experience is the pre-reflexive way of association with nature – though it must be stressed that this association *with* nature, is always an association *in* and *of* nature as well. Within primary experience subject and object, man and nature are still inextricably bound up with each other. The human being within primary experience is *one* with his 'immediate opposite'. Such an experience is not an *epistemic*, or a *knowledge* experience. Initially, we experience things without knowing them. Things in their immediate quality are things had felt,

> suffered and enjoyed, before they are things cognized [Lechner, 1995: 6-7].

In subsequent stages, firstly we reflect the perceptions from ‘primary experience’ on the human mind and transform them into understandable and thus knowable perceptions. At this point, Lechner expresses his views for the next stage referring to their claims on unique features of human mind, namely, Deawey and Litt’s ‘reflexive intelligence’ and ‘methodical thinking’ terminologies, respectively. To him, as a continuation of this process, he assumes that subject and object are no more together as primary units, and that they have been dramatically opposite to each other in their current forms. [Lechner, 1995: 7]

According to the discourse developed by Lechner, the relation of art and science becomes problematic as long as the framework is determined by epistemological tradition. If we take this framework as a basis and see the discussion in this parallel, obvious differences between science and art become complicated to explain. But if we do not view the discussion from this framework, the relationship is released from being problematic with Lechner’s following expressions.

> Science and art can both be seen to have their origin in primary experience, in association. Science can then be considered as one of the several possible ways in which human experience develops from primary experience towards more sophisticated forms of experience. Science then can be seen as on a par with other forms of refined experience: religious experience, moral experience, and, of course, aesthetic, or artistic experience [Lechner, 1995: 7-8].

Lechner carries the discussion on the relationship of art and science to a new platform. This is the dimension of relations of two realms that have different epistemological and metaphysical statuses. As a continuation of this discourse, Lechner proposes that the answers to the following questions have to be studied in order to be able to understand the relationships of these two realms in the real sense.

> How does science develop from primary experience, how does art develop from primary experience, and what are the similarities and differences? What does the human being add to primary experience by means of reflexive intelligence, or methodical thinking, so that it ends up with art, or with science? What does it need in order to do so? What does art add to the human being, and what does science? [Lechner, 1995: 8]

Discourse developed by Lechner for the discussion of the relationship between art and science is parallel to S. J. Kline's determination; "the tendency of the human mind to disassemble into pieces and study each piece separately in order to understand the reality of the entirety creates a problem of communication between the pieces of the divided structure created by its linear and mono-directional advance [Kline, 1995: 1-2]" for the generality of intellectual terrain. At the same time, it is also parallel to the proposal of Kline brought as a solution that the disassemble process has to be operated to the contrary and this process has to be used as a control mechanism. [Kline, 1995: 41-43]

S. J. Kline's discourse developed for the multidisciplinary concept for the generality of the intellectual system composes significant inputs for the discussion multidisciplinary collaboration in the design domain within the framework of the processive expansion and

potential results. In his discourse S. J. Kline also emphasizes the critical factor communication in the multidisciplinary concept and determines its general framework. Discourse developed by Lechner for the art / science debate gains significance in the framework of the preparing the relevant ground for the far end of the communication in the intellectual system and also for the internal debate of the design disciplines caused by their specific characteristics possessing the debate art / science in their structure.

CHAPTER 3

THE LIMITS OF Multidisciplinary Collaboration IN ARCHITECTURE

3.1. Background of Multidisciplinary Collaboration in Design Domain: Architectural Projections

Architecture has always been using the disciplinary frameworks as a source of alternative approaches. Some of these are history, technology, art, sociology, religion, etc.

Dependent on the existing conditions of the period and characteristics of the design topic, external disciplinary framework sources are subject to changes. Some sources have lost their importance; some have been added to the list. All these changes have been reflected in the understandings of architectural design.

For example in the last two decades the following topics have gained importance:

- Natural environment
- Energy
- Social needs

Architecture has started to use these new topics as an alternative framework by adapting their accumulation of knowledge to its own design strategies and the following approaches have been revealed:

- Energy-Sensitive Design
- Environmental-Sensitive Design
- Social Content Projects

For example, historical references have always been used as an alternative framework in architecture.

L. Krier developed effective urbanism approach with deep projections from architecture to historical and urban references together with the strong dependency of humanistic standards.

Some of his well known propositions are listed as following:

- *The City within the City:* A large or small city can only be organized as a collection of autonomous urban quarters. The dimensions of a quarter are determined by the comfortable reach of a walking person.
- *Building Heights, and Critical Problems of Plot-Ratios:* The most beautiful and pleasant cities which survive today have all been conceived with buildings of between two and five floors.
- *Contemporary Perspectives:* There exist universal principles for building good cities and villages. They transcend ages, climates, and culture. It is not history and age, but structure and ideas that confer quality to an urban context.

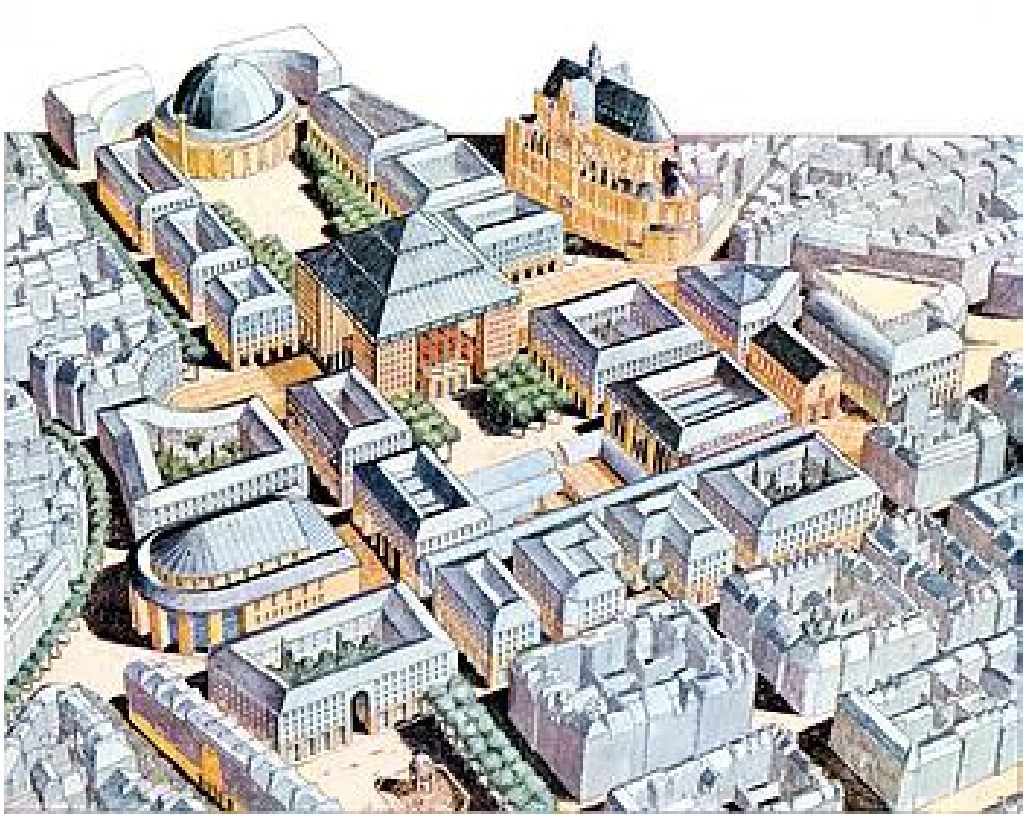

Figure 4 Le Nouveau Quartier des Halles (1979) Reconstruction Proposal by Leon Krier.

A. Rossi like L. Krier with strong projections from architecture to historical and urban references developed his unique approach. While explaining all his projects, he always refers to historical and urban background of the topic as the starting point of his design.

Technology sometimes with new materials and construction methods, sometimes with new spatial formations has affected architecture. In the history of architecture marks of these external

factors can be perceived with the changes in the architecture products.[4]

Archigram Group from 1960s to early 1970s developed an approach that influenced many newcomers. By rejecting existing precepts in architecture, except the functionalism and taking strong support from technology this group perceived the architecture and its closer environment in its own 'primary experience' and developed the following projects. [5]

As projections from architecture to technological developments they created Blow-Out Village concept projects that were new approaches to architecture.

Figure 5 "Blow-Out Village" proposal of Archigram.

As projections from architecture to technological and urban contexts they developed Plug-in City, Walking City concept projects that were new approaches both for architecture and the city planning.

[4] The entrance of steel and glass as new materials changed architecture's construction methods, space understandings etc. For example geodesic dome, with its properties, ability to construct thin shell that can cover largest volume with minimum amount of material enlarged its practice area. R. B. Fuller proposed different usages of this new form from housing to shell covering New York.

[5] Archigram [Internet, WWW]. ADDRESS: http://www.archigram.net/index.html [Accessed: December 5, 2005].

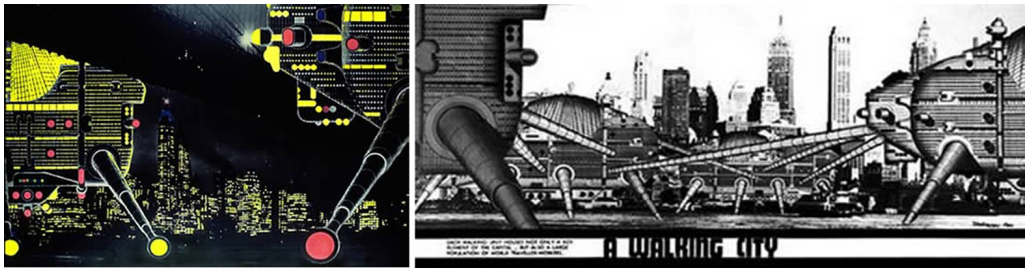

Figure 6 “Walking City” proposal of Archigram.

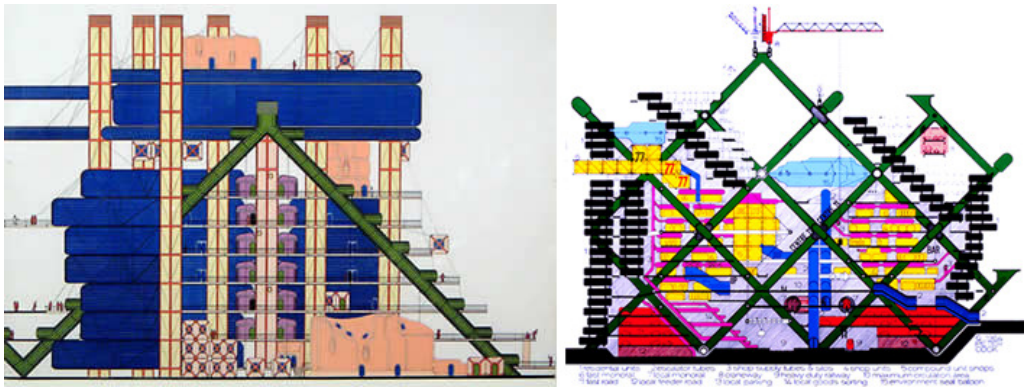

Figure 7 “Plug-in City” proposal of Archigram.

As projections from architecture to technological developments and interior spaces they developed Living pod, Capsules concept projects that were new approaches both for architecture and interior design.

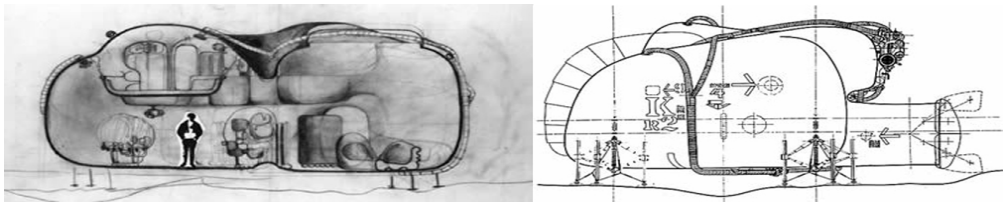

Figure 8 “Living Pod” proposal of Archigram.

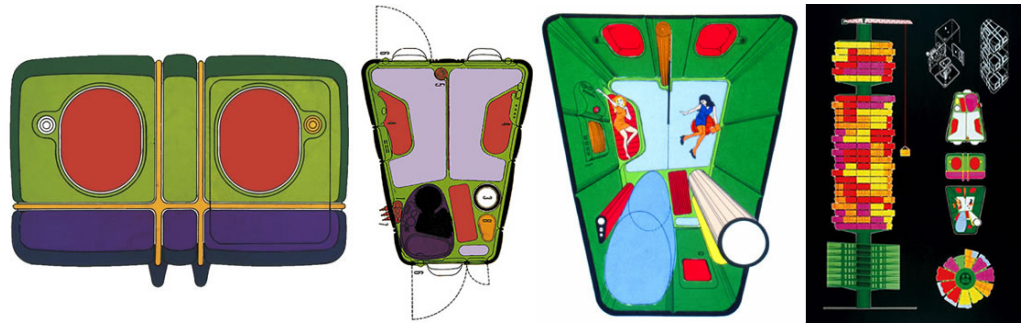

Figure 9 “Capsules” proposal of Archigram.

As projections from architecture to technological developments and landscape they developed new concepts about the relations between architecture and landscape.

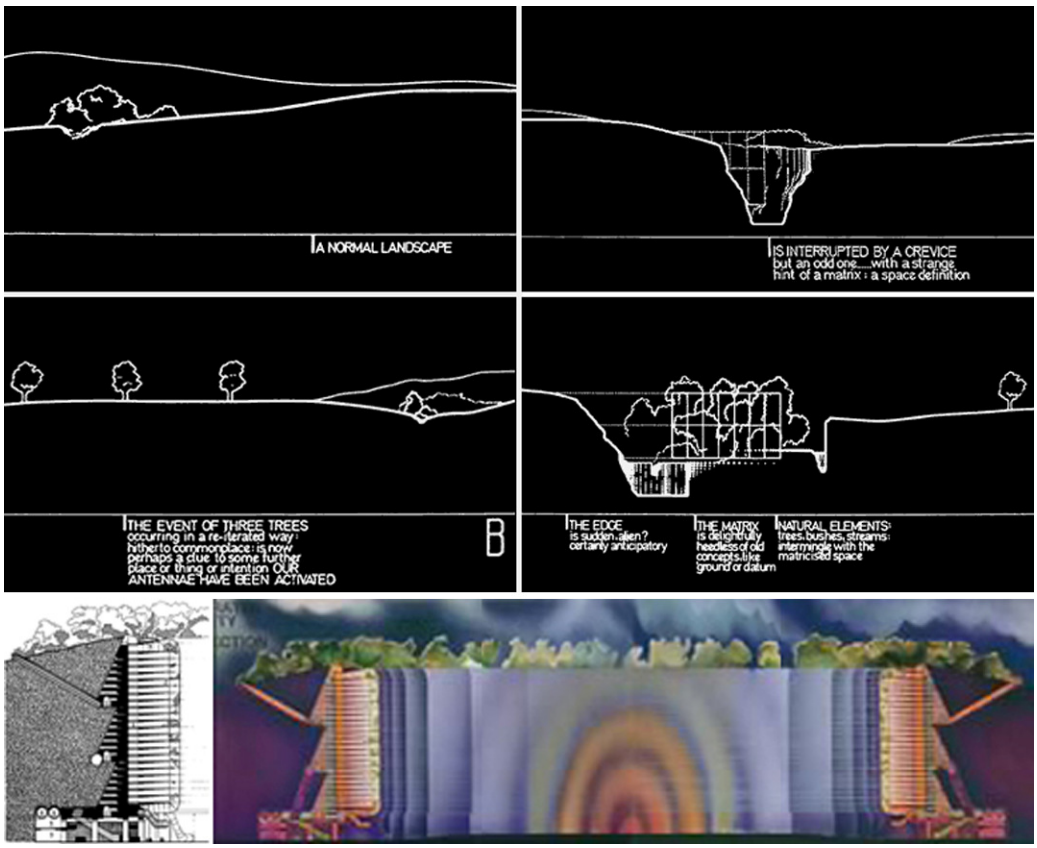

Figure 10 “Landscape Project” proposal of Archigram.

Many others can be added to the above-mentioned examples.

The general attitude of the architecture using external disciplinary frameworks to develop new approaches, within the framework of the S. J. Kline's determinations for the generality of the intellectual system for multidisciplinary concept can be evaluated as following;

In all examples,

- There is a communication with environment by making projections to particular external sources and newly sprouting territories of design disciplines.

- Restructurings occurred in the architectural design understandings as a result of communication.

- As a result of restructuring in the architectural design understandings, new contributions are developed both for architecture and for newly sprouting design disciplines (city planning, landscape architecture, industrial design and interior design). If referred to the Figure 1 and 3, both some dark parts of the design domain terrain in the direction chosen to communicate and newly sprouting design disciplines are enlightened.

In all examples due to contradictory parts led by their projection references, their approaches developed can be commented as contrastive discourses. However, when they are reviewed within the general determinations for multidisciplinary concept, they overlap in

certain extent with each other both in the framework of the procedure and gained results. What makes them different from their period colleagues is their struggle to communicate with their environment, and make smooth communication and use the information gained from communication to restructure their architectural understandings precisely.

3.2. Emergence of Contemporary Multidisciplinary Collaboration Medium in Design Domain

By the gradually diffusion of the fragmentation process observed in the intellectual system in general, the first disintegration is realized by specialization from the technical part of traditional architecture by 'engineering'. Disintegration of engineering is followed by specialization of city planning, landscape design, interior design and industrial design mostly based on scale diversities. As a result, contemporary design domain started to be forming. [6]

> The legendary divorce of architecture from engineering, arts and crafts and later, its revision of bonds with them, mark the modern history of the profession. In a world where all these fields have come to be instituted in isolation from one another, the profession of architecture found itself weaving between them not only in practice (as the architect

[6] The fragmentation process in the design domain is a non-completed, dynamically continuing process. Considering the Turkish section of branching, it is being observed that while the fragmentation in the design disciplines in academic circles continues, practical reflections of disciplines arisen as a result of this fragmentation professional associations chambers, foundations etc. are in various levels of establishment. Moreover, they are at various levels of acceptance in public bodies and organizations. For example, while the City and Regional Planning discipline having a deeper past is more established in all dimensions, Landscape Design discipline is relatively less established both for its academic and practical dimensions. Besides, the Industrial Design discipline is relatively less established in all dimensions.

> maintained his role of coordinating the building tasks), but also in theory, so as to find its true identity on disciplinary and ideological grounds. Proceeding along the methods and ideals of one or other, architecture has at times confined itself to art, at others leaned to engineering, sometimes upheld the craft origins of the profession, other times emphasized the practical planning aspects, or invented broader planning prospects for the profession [Balamir, 1996: 4].

Gradual progress of design disciplines forming a medium in design domain where enormous knowledge started to accumulate. Enormous knowledge accumulation similarly to the Kline's determinations for the generality of the intellectual system, but in a different scope, started to cause similar problematics in contemporary design domain.

These are:

- Isolations of the design disciplines from each other.

- Isolations of the design disciplines from each other leading to broken relationships between design disciplines.

- Broken relationships resulting from conflicts among design disciplines are as follows:

    - Domain descriptions
    - Truth / value concepts

- Broken relationships between design disciplines create an environment that prevents convergence in the common denominator on common issues.

In the light of the problematics, the contemporary situation of the design domain can be evaluated as a medium of design disciplines that are remotely instituted from each other forming isolated nurtured schemata. As a result, this compartmental structure is rather put into practice in different periods by consecutive interventions in order to form our cities.

Communication in the design discipline relations is provided in the following limited ground. One of the design disciplines within the limitations of its disciplinary schemata communicates with its environment and adds to its design proposal. Then the other one communicates with transformed environment by the previous design discipline's intervention within the limitations of its disciplinary schemata and adds to its design product. Step by step as an end product a city is formed.

In the light of determinations about the production relations between design disciplines contemporary multidisciplinary collaboration in design domain can be evaluated as medium where roles of design disciplines to each other are limited as ancillary and complementary.

3.3. Proposal of Processive Framework of the New Multidisciplinary Collaboration Medium in Design Domain

Contemporary multidisciplinary collaboration design medium in which cities are formed by the consecutive interventions of developed design disciplines possesses following problems.

- Lack of connection between design decisions
- Lack of connection between design understandings
- Lack of wholeness

The way and the level of communications between design disciplines emerge as a main source of the problematics.

To increase the communication among design disciplines contemporary multidisciplinary collaboration medium needs to be transformed to a medium in which design disciplines yield products in synchronization and collectively.

In this regard the expansion of the transformation of the contemporary multidisciplinary collaboration medium in design domain can be implemented as in the following:

- Previously observed limited communication among design disciplines shifts to direct intercommunication among design disciplines.

- Direct intercommunication among design disciplines leads to reciprocal interaction of design disciplines.

- Reciprocal interaction in the design disciplines causes reciprocal restructurings in them.

- As a result of reciprocal restructurings in design disciplines some clarifications in the relationships occur:
    - The clarification of the relationships of the design disciplines surrounded by the others.
    - The clarification of the roles of each design discipline for entirety of design domain.

Similar to the proposition for the entire intellectual domain, processive expansion of multidisciplinary interaction / dialogue equips design domain with the following gains:

- Preventing compartmentalization and thus the formation of ‘cultural gaps’ among design disciplines in the design domain.

- Defined and clarified relations of design discipline lead to the ‘continuity’ in the design domain.

    - The providence of continuity in design disciplines surrounded by the other ones.
    - The provision of continuity of each design discipline together with the main objective.

- The accomplishment of the continuity in the design domain causes affirmative contribution as a matter of ‘wholeness’.

3.3.1. New Opportunities in the Restructured Design Domain

Defining the scope of new skills of the design domain that are gained after the processive framework leads the discussion inevitably to the determinant communication. The methods of how design disciplines can communicate bring forward composite structure of design disciplines. The unique composite structure of design disciplines broadens the discussion into the art science discussion of Lechner.

According to the findings gained from the Kline's discourse with basic communication tool 'projection', scientific side of the design disciplines by restructuring itself seizes the chance of perceiving the fields that have remained unknown till now together with the exploring new fields. The unique composite structure's artistic side seizes the chance of being fed with pure form of innovations just like in Lechner's relevant communication ground 'primary experience', without any interference of a different epistemology based interpretations. This new form of internal relationship causes the transformation in the design understanding.

Change in design understanding can be expanded as following:

- Change in function understanding
- Change in space understanding

3.4. Partial Steps for the New Multidisciplinary Collaboration in Design Domain: Architectural Projects

At the beginning of the 21st century some architectural products started to present marks of the formation of the new multidisciplinary collaboration medium in design domain. Architecture with a projection method that has always been used to restructure itself by feedbacks, now confronts with developed design disciplines having more complex schematas that in the beginning were instituted by architecture but for three to four decades design disciplines have instituted themselves. As a result of this new condition, previously as seen conceptual results has started to be exchanged with deeper ones in which doctrines of design disciplines are in an interactive position.

This change is perceived more clearly especially in the results of the projections from architecture to the landscape design because of sudden appearance when compared to the city planning projections for which the architecture has always behaved to do so.

The creation of the building surfaces with the elements of landscape architecture emerged as a new attitude in some contemporary examples.

Figure 11 The proposal of T.R.Hamzah & Yeang for European Central Bank awarded with a 3rd Prize. Green texture continues in the building facades as a volumetric characterization element.

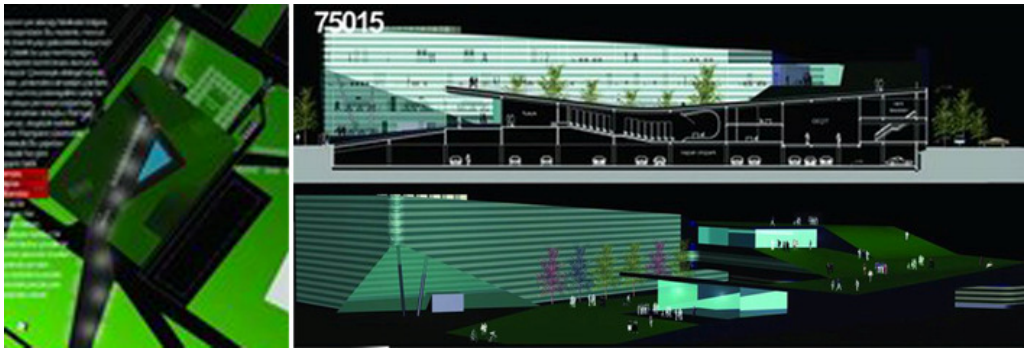

Figure 12 The proposal of E. Ergül, Z. İmren, M. Hançerli, A. Kantarcı and Y. Akgün for Eskişehir Tepebaşı Municipality Building awarded with 2nd Honorable Mention. The green instrument of Landscape Architecture is used as the covering ramp of an Architectural space.

The integration of the potentials of an urban structure (pedestrian, green etc.) with the organization of a building emerged as a new attitude in some contemporary examples.

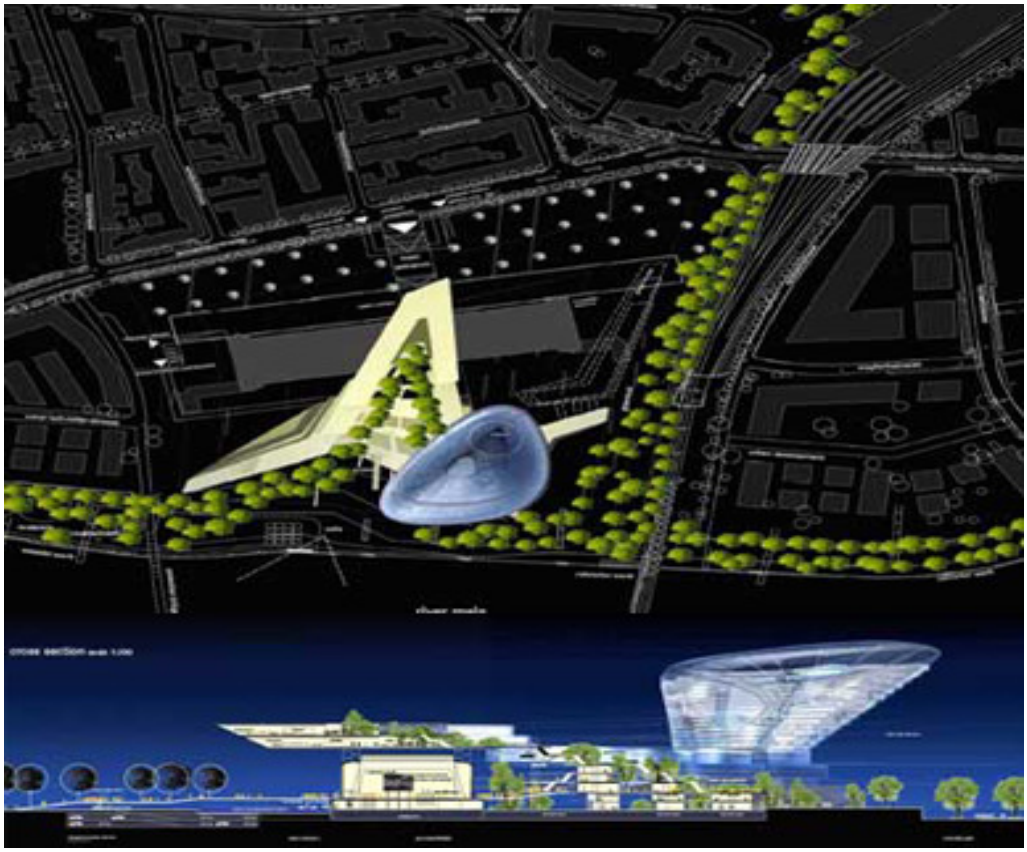

Figure 13 The proposal of Hascher Jehle Architecture for European Central Bank, which is one of the finalists.

Presented samples may be increased by adding many others. The common point of these samples is that they all present in certain extent the determinations of the thesis comprising the contemporary equivalents of architecture parts. But perceiving the intrinsic potentials of the new multidisciplinary collaboration medium in design domain in a holistic manner that serves solutions for the contemporary problematics in it, directs the subject from architecture based limited area to the mutual areas where all design disciplines get together, because the conditions in the design domain have transformed. The period in which we live there are developed design disciplines that have already been yielding products in a consecutive manner.

These mutual areas can be defined as following:

- Larger topics opening to the participation of all design disciplines
- Intermediary topics on design disciplines

3.5. Development of a New Multidisciplinary Collaboration in Design Domain: Emergence of Urban Design Competitions

Before starting the investigations about the congregation of disciplines in design domain; the significant role of the competition mechanism in architecture culture hosting these congregations should be clarified in the light of the short review of implication of the competition mechanism to the deviations of design domain.

Although the architectural design competitions are criticized severely because of the inherent forces they possess, they have continued their regenerative position for 2500 years in the historical background progression. Since they have directly related with the culture of architecture, they have become the interest points for many researchers and a lot of analogies were made.[7] Among these analogies the most accepted and quoted one is the battleground, which was the manifest of H. Lipstadt: “giant architecture classrooms with

[7] H. DeHaan and I. Haagsma use the simile of “treasure houses of architecture” to emphasize the importance of the architectural design competitions in their books which has been contributed by D. Sharp and K. Frampton with essays, where they study the 200 year of competitions in our near past in all dimensions.

invisible boundaries" generally open for everyone's participation where opposite views may independently be expressed and clash.[8]

Parallel to the fragmentation period in the design domain for more information; monolithic competitions mechanism fragmented by evolution and continued to be the platforms for each fragmented design discipline.[9] City planning, landscape, interior and industrial design competitions which started to appear among the architectural design competitions can be listed as the competitions due to the effect of fragmentation.

At the beginning of 21st century, parallel to the steps for overcoming the problematics of the design domain competitions possessing more than one design disciplines started to be organizing.

If a classification is made according to the source of the constitution, some of them include City Planning and then Landscape Design within the discipline of architecture by enlarging the scale and the others are the subjects among design disciplines. These competitions began to develop together with the discipline of architecture allowing city planning, landscape architecture, interior design, industrial design and even sculpture from fine arts in its structure and named as 'urban design competitions' today.

[8] In the said catalogue, besides perspectives on the history of competitions in the United States and Europe from the Renaissance to the present, roles, contributions, promised potentials of architectural design competitions in the architectural culture and criticisms to the culture of competitions are examined in detail and depth with references from important names of the said period.

[9] The supremacy of the evolution period that competitions mechanism covers can be observed from the book of J.Strong; who was the organization committee member of RIBA architectural competitions.

Emergence of multi-disciplined competitions and their accumulations under the urban design competitions title have realized an evolution process forming itself on the grounds of the pioneer architectural competitions without any definite rigidity and restrictions. The effectiveness of design disciplines on evolution process is related with their development levels. In this context, the commonly observed dominancy of architecture discipline has started to be well balanced step by step in terms of theme's necessity of disciplinary richness whether in the composition of participant teams and composition of assessment body parallel with development of other disciplines.

Congregation of the design disciplines under the urban design competitions possesses significance in the framework of the multidisciplinary collaboration because of the medium they are composing. In this medium the processive framework of multidisciplinary collaboration caused only by architecture comes to a halt and transforms into a more complex one in which including the architecture the other design disciplines are added to the process; where all design disciplines intercommunicate, interact, and restructure one other.

CHAPTER 4

ANALYSIS OF SAMPLE URBAN DESIGN COMPETITIONS

The potentials that the meetings in design domain promises, within the limits of the discussions of previous paragraphs have started to appear in contemporary products with differing provisions. The examples from specific selected competitions will be analyzed without any concern on their gradation in competitions, but only within the thesis determinations. In this context, analyzing way of sample competitions overlaps with their distinguishing role from other competitions, not only to maintain a hierarchical winner list but also to form medium where transformative innovations can be freely express in architecture culture.

As mentioned in previous paragraphs, design topics in which multidisciplinary collaboration materializes in design domain may be grouped as following:

- Design topics spreading to all design disciplines.
- All intermediary design topics among design disciplines.

In order to analyze the first group that constitutes majority two sample competitions presenting particular characteristics for elaborating

the following conditions have been selected. İstanbul, Gaziosmanpaşa Architecture - Urban Design Competition (2004) and Paris, Urban Rearrangement of the Les Halles District (1st Stage) (2003 – 2004).

- Mono disciplinary teams and multidisciplinary teams in the multidisciplinary design topic.
- The role of differing disciplinary richness in teams

In order to analyze the second group that constitutes the minority New York, High Line (1st Stage) (2004) has been selected as a sample competition.

All sample urban design competitions have been analyzed within the criteria determined in the proposal of processive framework of multidisciplinary collaboration in design:

- Technical gains in design
  - Continuity
  - Wholeness

- Change in the design understanding
  - Change in function understanding
  - Change in space understanding
  - Architectural language

4.1. İstanbul, Gaziosmanpaşa Architecture - Urban Design Competition (2004)

The architecture - urban design competition about the municipality service building with its nearby environment in the most crowded district of İstanbul was organized between the dates of July 27, and November 8, 2004. According to the differentiation in development levels of design disciplines in Turkey, both in participation and in assessment, architecture was dominant in this architecture oriented competition. Although the competition was exposed to all design disciplines in Turkey, like a confirmation of the statement above, the most of the teams were from the discipline of architecture. (Table 1)

Table 1 Disciplinary composition of the teams participated in İstanbul, Gaziosmanpaşa Architecture - Urban Design Competition (2004), Günay Erdem, 2005

Team	Members	Discipline
1.	Dilek Topuz Derman	Architect
	Fırat Gülmez	Architect
2.	Sunay Erdem	Landscape architect
	Günay Erdem	Architect
3.	Hasan Okan Çetin	Architect
	Ömer Emre Şavural	Architect
	Fatih Yavuz	Architect
4.	Deniz Aslan	Architect
	Elif Çelik	Architect
	Ceren Hancıoğlu	Architect
	Volkan Lokumcu	Architect
5.	Haşim Ertuğ Uçar	Architect
	Mehmet Vehip Kütükçüoğlu	Architect
	Mehmet Mert Ayanoğlu	Architect
6.	Feride Önal	Architect
	Togay Özkaraduman	Architect
7.	Murat Güneş	Architect
	Kemal Erçoban	Architect
	Mustafa Öğdür	Architect
8.	Yavuz Selim Sepin	Architect

The projects mentioned below can respond to the disciplinary complexity within themselves in different levels. In this context, the

projects imply differences starting from the formation of proposed architectural program following differences in scope by broadening to other design disciplines. In this analysis, two projects are focused on since they have improved comprehensive solutions for this multi dimensional subject. One of them is the project developed by D.T. Derman and F.Gülmez which represents the teams from the discipline of architecture only. The other one is the project developed by landscape architect S. Erdem and architect G. Erdem to represent the multidisciplinary teams.

The analysis of the two teams with different disciplined participation origin can reach to the fine limits of both project suggestions including disciplined complexity in its background by means of mono discipline projections and the project suggestions as a result of multidisciplinary collaboration.

Both projects have suggestions implying the awareness of the theme's disciplinary complexity. These suggestions can be listed according to the scale criteria as follows:

- İstanbul Metropolitan Scale
- The Nearby Environment Scale covering the district center
- The scale of architectural spatial formation

On the Istanbul Metropolitan scale, a green texture corridor continuity suggestion starting from Haliç passing from the competition area in Gaziosmanpaşa city center and leading to Alibeyköy Stone Quarry envisaged as a region park which is on the edge of the neighbor district Eyüp was revealed.

Figure 14 plan of the upper scale suggestion prepared by D. Derman and F. Gülmez.

Figure 15 plan of the upper scale suggestion prepared by S. Erdem and G. Erdem.

Suggestions were developed to rehabilitate the fragmented urban public texture of the competition area. In this context; suggestions were revealed taking smooth vehicle traffic and the mass transportation paths into consideration to provide the pedestrian continuity on Cumhuriyet Square, the Service Area of the Municipality and the Mosque Square.

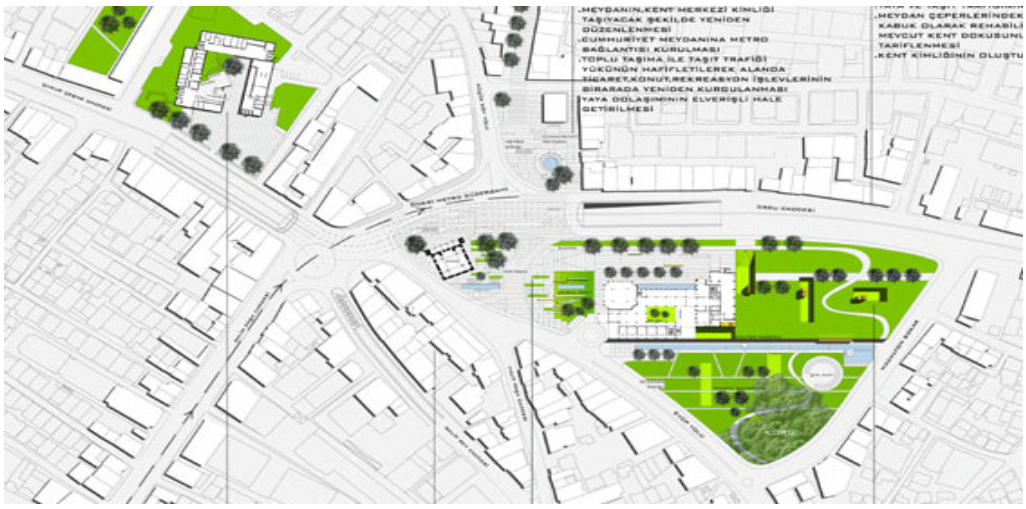

Figure 16 closer environment plan proposal demonstrating the suggestion of D. Derman and F. Gülmez in order to provide continuity of the green texture and public urban spaces.

Figure 17 closer environment plan proposal demonstrating the suggestion of S. Erdem and G. Erdem in order to provide continuity of the green texture and public urban spaces.

In the scales of the discipline of architecture, there are also suggestions providing the overlap of the existing municipality service building with environmental factors. The same approach can also be seen in the design of new culture center. In this context, suggestions utilizing the potentials of the competition area were presented.

Such as:

- Slop of the competition area
- Important urban vista potential of the competition area

Figure 18 Section demonstrating the suggestion about evaluating Istanbul and Haliç vista of the existing Municipality Service Building of D.T. Derman and F. Gülmez.

Figure 19 Section demonstrating the suggestion of S. Erdem and G. Erdem about lower and upper level ground relationships and evaluating the vista potential of the area by grass ramp.

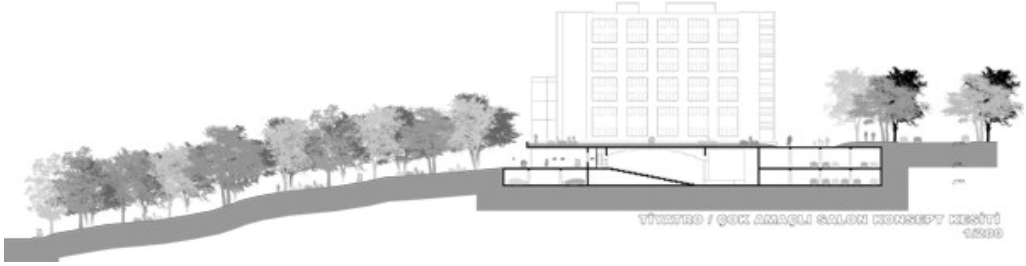

Figure 20 Section demonstrating the suggestion of S. Erdem and G. Erdem about lower and upper level ground relationships.

Figure 21 Section demonstrating the suggestion of D. T. Derman and F. Gülmez about lower and upper level ground relationships.

Among the proposals make to the subject that includes disciplinary complexity, methodological differences can be observed because of teams' different disciplinary origins. In the project of D. T. Derman and F. Gülmez suggestions related to different design specialization fields are made by projections from the discipline of architecture. The traces of the restructured 'schemata' fed and restructured by these projections can be read from their architectural scale proposals. In the project of S. Erdem and G. Erdem, there is a structure fed by reciprocal projections from two different design disciplines. With these projections, the restructuring by reciprocal feeding of the 'schemata' of the two design domains can be observed both in the discipline of architecture field proposals and the discipline of landscape architecture field proposals.

The mono disciplined structure in the project of D. T. Derman and F. Gülmez leads to the ambiguity due to the secession from the discipline of architecture. This ambiguity shows itself in the nearby environmental scaled proposal like public mass transportation, pedestrian access and vehicle access. In the metropolitan scale this uncertainty increases and the proposal starts to be a schematic expression of the idea.

As a result of the awareness of the theme's multi dimensionality; 'continuity' emerges as important gain in both projects. The decisions in order to respond the need for the open public green areas that are important for Gaziosmanpaşa District are continued in metropolitan, nearby environment and building organization scales respectively. Through this approach, the entire fragments are not isolated but on the contrary, they are connected and support one another.

In both projects the potential to improve a new approach which is one of the invention of the thesis, can be observed in the proposals of architectural scale. On the contrary of other projects, in both projects the suggested new architectural structuring does not waste its energy on figural pursuits or somewhere else, as a result of this it pulls back itself and appears at a minimum physical level on the area; In D. T. Derman's project this is accomplisher only by lighting effect (Figure 22), in S. Erdem's project presents itself by only with form repetitions of the simplified existing Service Building of the Municipality (Figure 23). In both projects, an attitude has been presented to concentrate its actual energy on maintaining the upper scale suggestion about the green pattern and the urban public space of the continuity of Gaziosmanpaşa district and also in the city center.

Figure 22 An isometric perspective about the suggestion of S. Erdem and G. Erdem taken from their presentation plate.

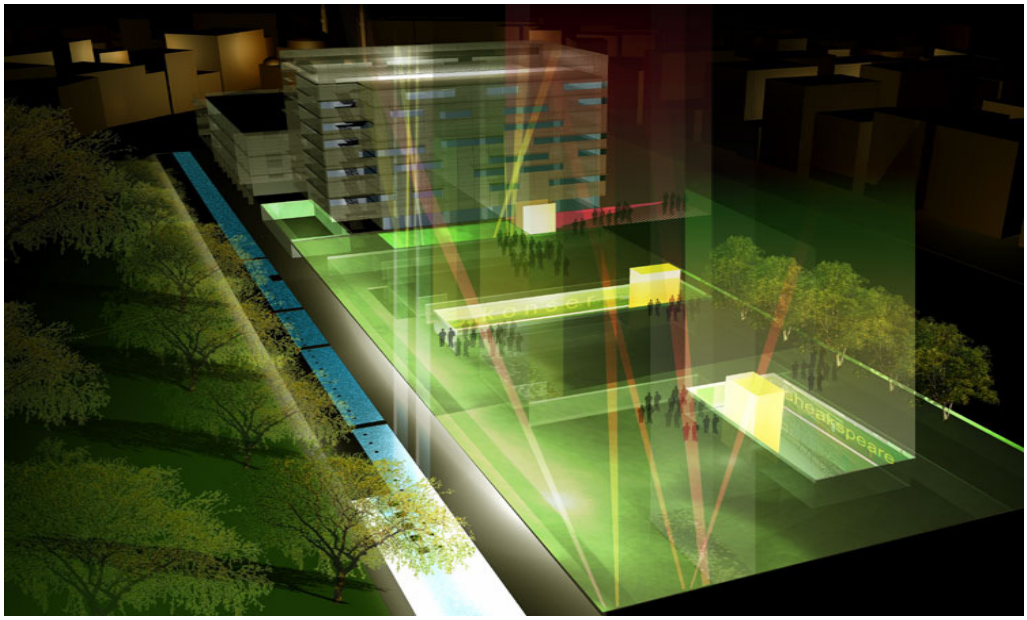

Figure 23 A perspective demonstrating the suggestion of D. T. Derman and F. Gülmez taken from their presentation plate.

Despite the difference in their constitutional origin; the partly similar results that both projects encounter raise the question of whether multidisciplinary collaboration can provide benefits parallel to the claims of the thesis. Although most of the mono disciplined teams

are in majority compared to the multidisciplinary teams; in the projects that can respond to the complex disciplined structure of the competition mono disciplinary teams are in minority when compared to the multidisciplinary teams. These numerical values introduce the specific difference of multidisciplinary collaboration in the design domain together with bringing another discussion, which is about the relations of different design domains in the foreground. The question is related with the disciplinary constitution in the design domain. Is the discipline of architecture senior one among others and are the others specialized form of it or is it as autonomous specialization as other design disciplines? The success of the project of D. T. Derman and F.Gülmez can be evaluated as the senior (generalist) side of the discipline of architecture becoming a prominent feature.

4.2. Paris, Urban Rearrangement of the Les Halles District (1st Stage) (2003 – 2004)

The administration in Paris organized a competition to which a limited number of guests were invited in 2003 on the topic of redesigning the famous Les Halles region in the city center.[10] The competition presents a character that covers the entire field of the design domain with its scope and theme. The teams selected for the second phase among the guests were AJN / Jean Nouvel, MVRDV / Winy Maas, OMA / Rem Koolhaas and Seura / David Mangin.

The projects of the teams with multidisciplinary character with the leading of the discipline of architecture reveal the indications for the collaboration in the design domain like the one in the first sample

[10] The official web site of the project competition. [Internet, WWW]. ADDRESS: http://www.projetleshalles.com/index/anmintro.htm [Accessed: April 20, 2005].

competition. But this meeting which can be characterized as a further step includes a deeper inquiry rather than a preliminary convergence.

Table 2 Disciplinary composition of the teams participated in Paris, Urban Rearrangement of the Les Halles District (1st Stage) (2003 – 2004)[11], Günay Erdem, 2005

Team	Members	Discipline
MVRDV	Nathalie de Vries	Architect
	Jacob van Rijs	Architect
	Winy Maas	landscape architect, architect, urban planner
OMA	Rem Koolhaas	Architect
	Ole Scheeren	Architect
	Ellen van Loon	Architect
	Joshua Prince - Ramus	Architect
	Floris Alkemade	Architect, Urban Planner
	Reinier de Graaf	Director of AMO
	Victor van der Chijs	Managing Director
seura	Florence Bougnoux	Architect, Urbanist
	Jean - Marc Fritz	Architect, Urbanist
	David Mangin	Architect, Urbanist
AJN	Jean Nouvel	Architect
	Olivier Boissiere	Architect, Advisor
	Hubert Tonka	Architect, Advisor
	Emmanuel Blamont	Architect, Design Principal
	Charlotte Kruk	Fashion Designer, Assistant

In contrast to previous competition in this one all teams present projects implying the awareness of the theme's disciplinary complexity. These suggestions can be listed according to the scale criteria as follows:

- Paris metropolitan scale
- The nearby environment scale covering the district center
- The scale of architectural spatial formation

[11] The information about the disciplinary composition of the teams is attained from their official web sites.
Ateliers Jean Nouvel [Internet, WWW]. ADDRESS: http://www.jeannouvel.com [Accessed: April 20, 2005]. MVRDV [Internet, WWW]. ADDRESS: http://www.mvrdv.nl/_v2/ [Accessed: April 20, 2005]. OMA [Internet, WWW]. ADDRESS: http://www.oma.nl [Accessed: April 20, 2005]. seura [Internet, WWW]. ADDRESS: http://www.seura.fr/accueil%20SEURA.html [Accessed: April 20, 2005].

Figure 24 A plan of the upper scale suggestion prepared by AJN / Jean Nouvel.

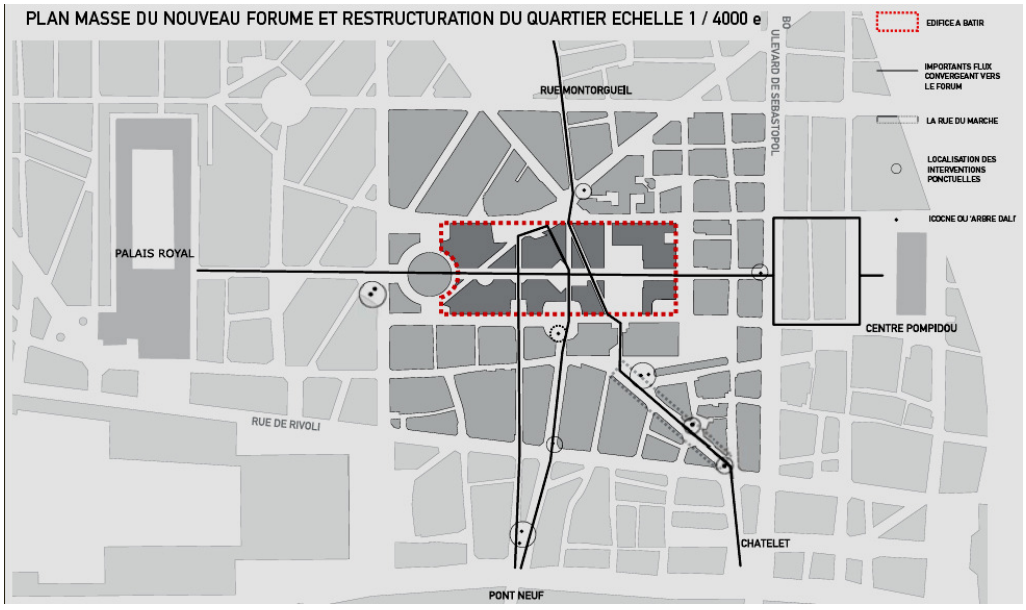

Figure 25 A plan of the upper scale suggestion prepared by MVRDV / Winy Maas.

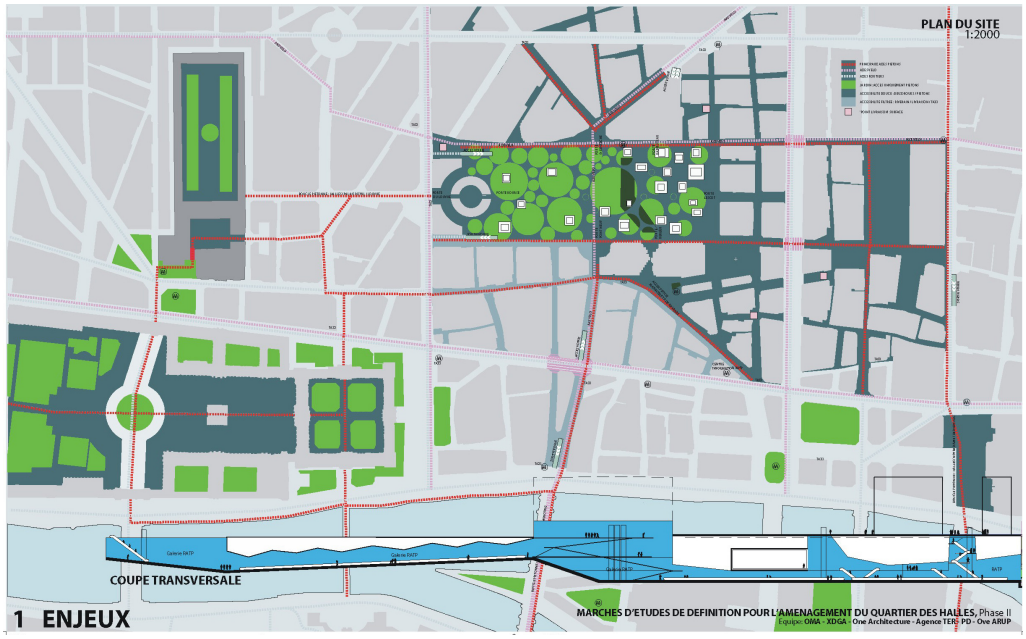

Figure 26 A plan of the upper scale suggestion prepared by OMA / Rem Koolhaas.

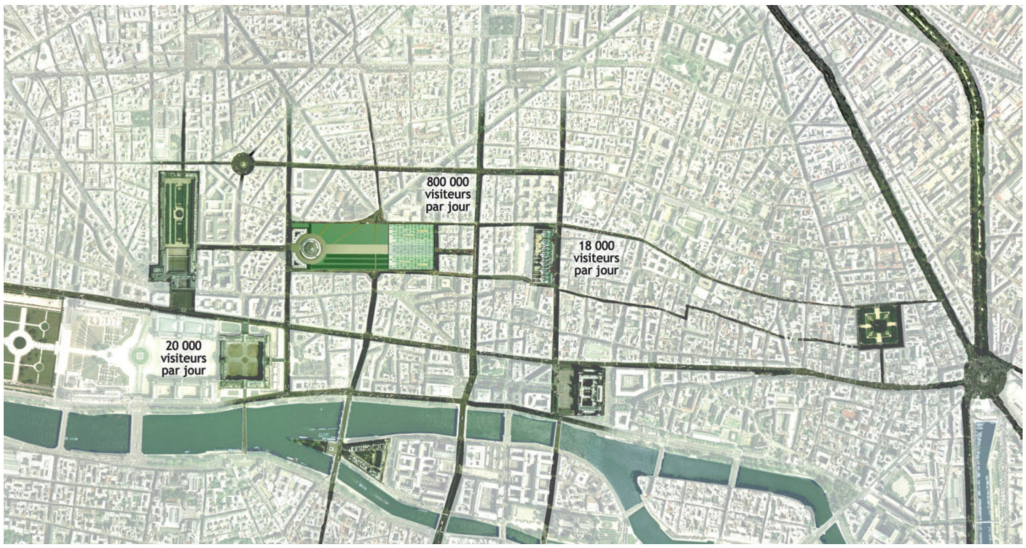

Figure 27 A plan of the upper scale suggestion prepared by Seura / David Mangin.

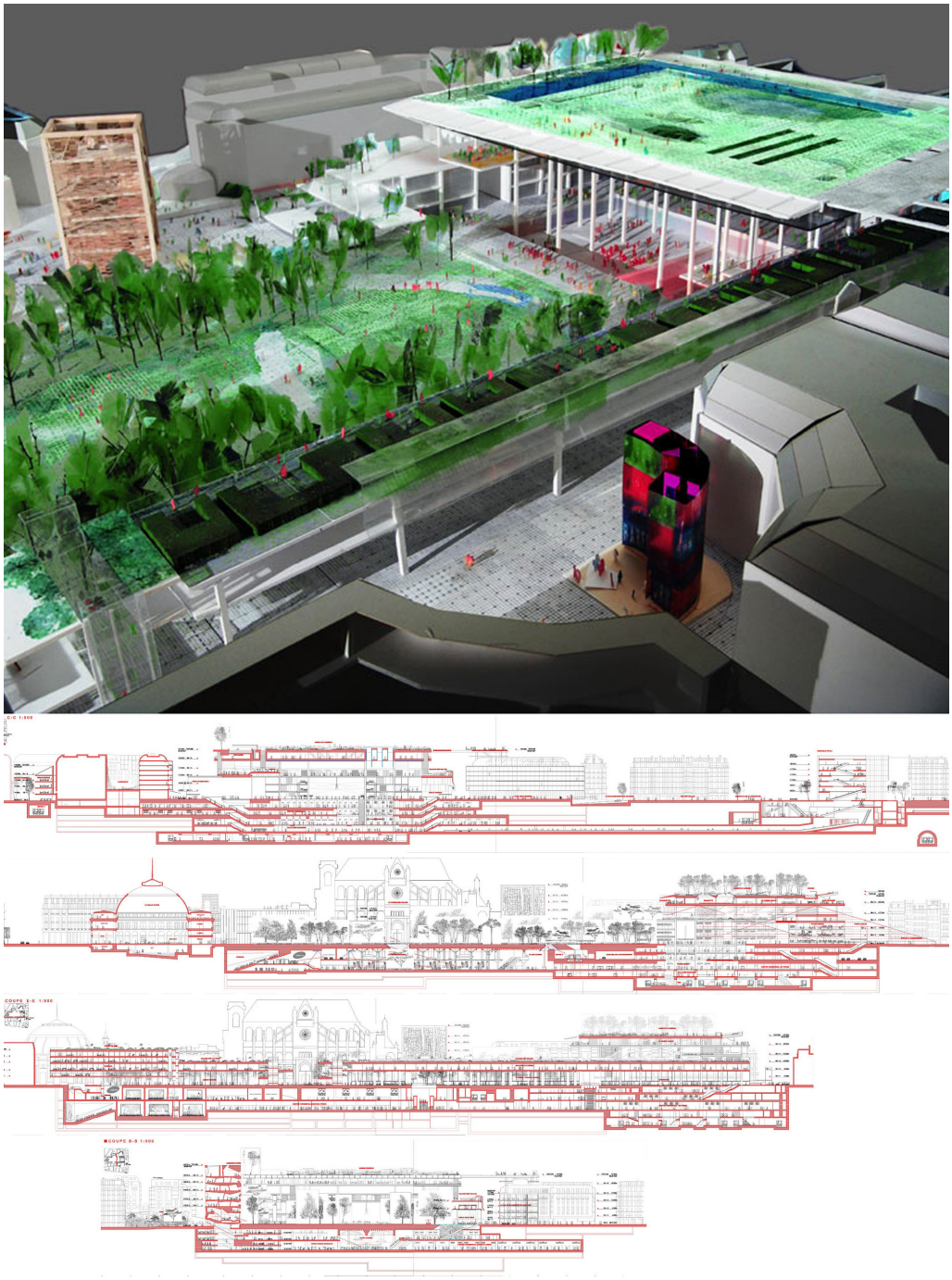

Figure 28 A closer environment and architectural scale proposal by AJN / Jean Nouvel.

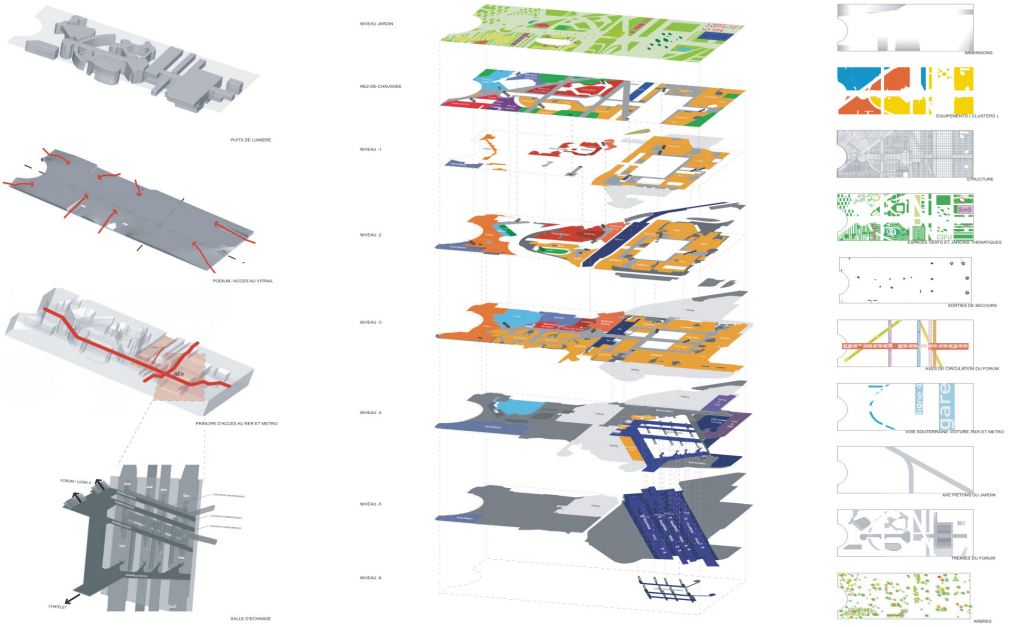

Figure 29 A closer environment and architectural scale proposal by MVRDV / Winy Maas.

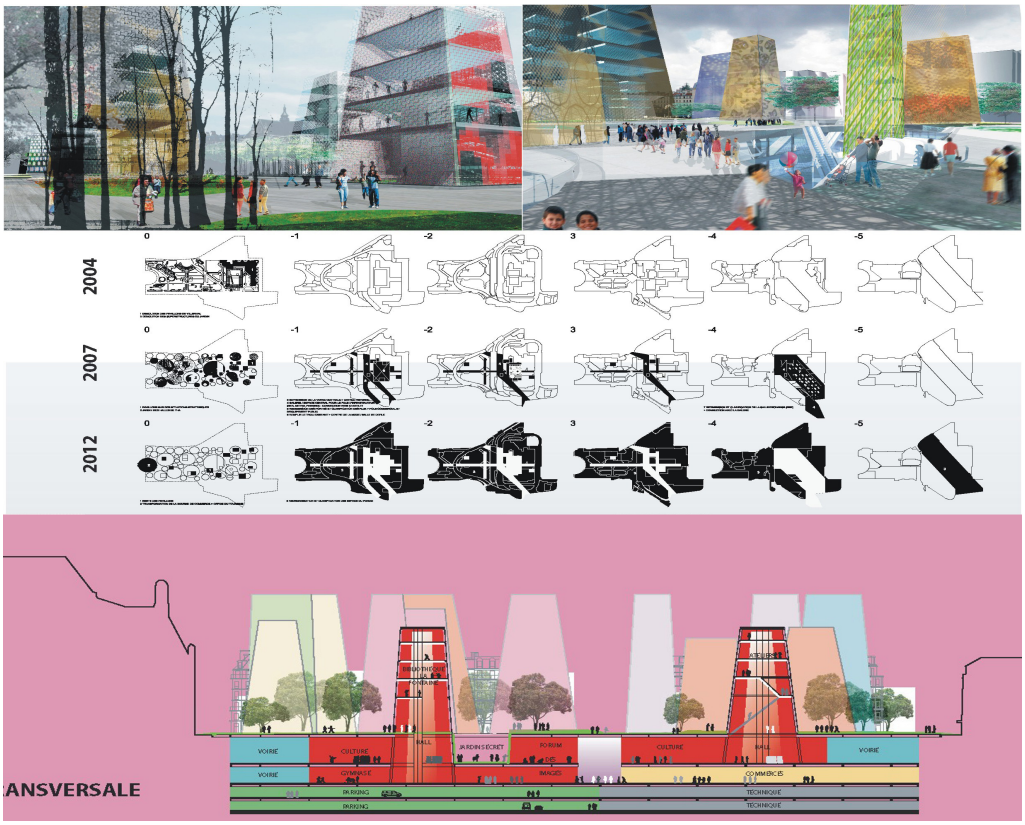

Figure 30 A closer environment and architectural scale proposal of OMA / Rem Koolhaas.

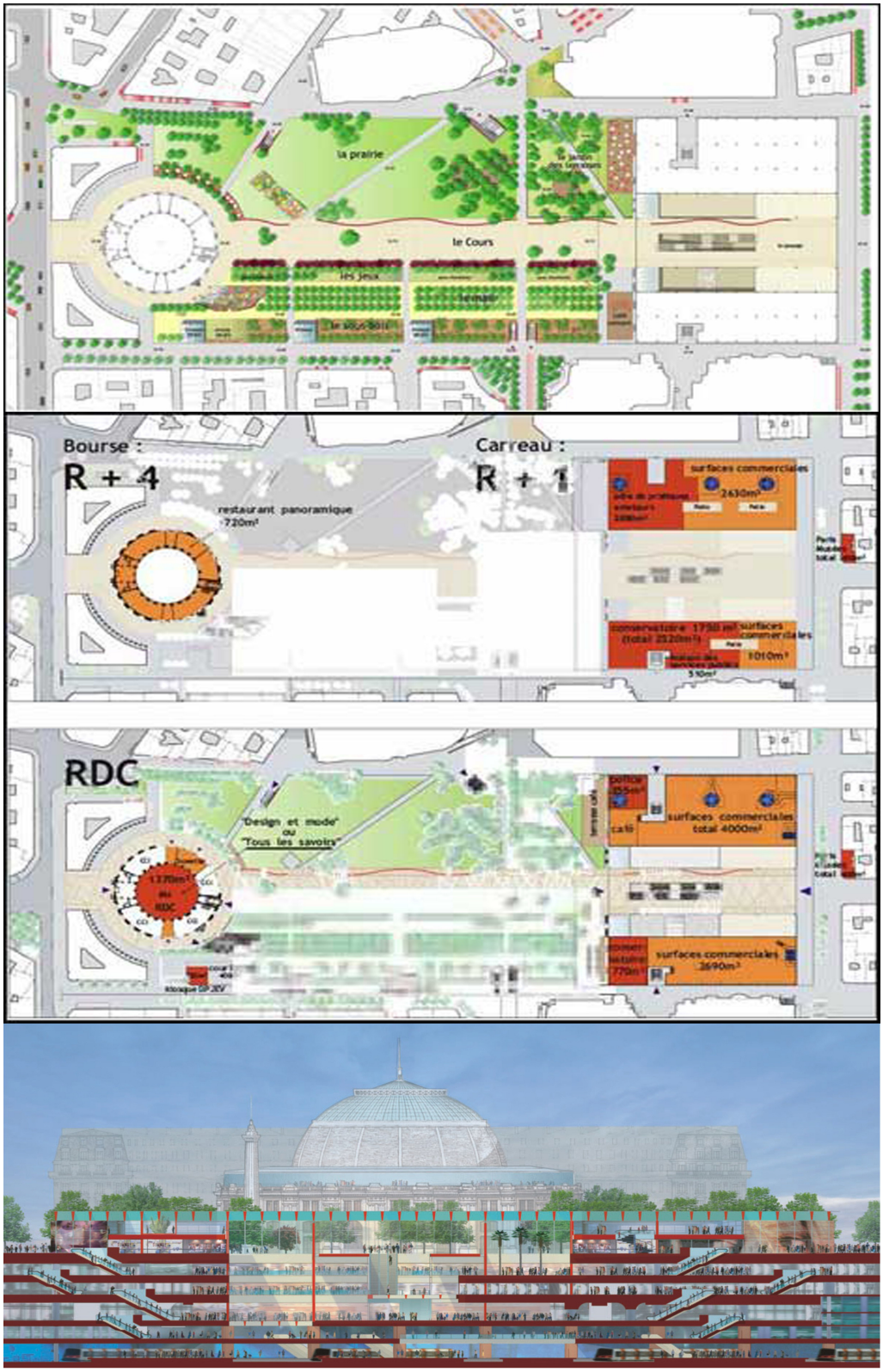

Figure 31 A closer environment and architectural scale proposal of Seura / David Mangin.

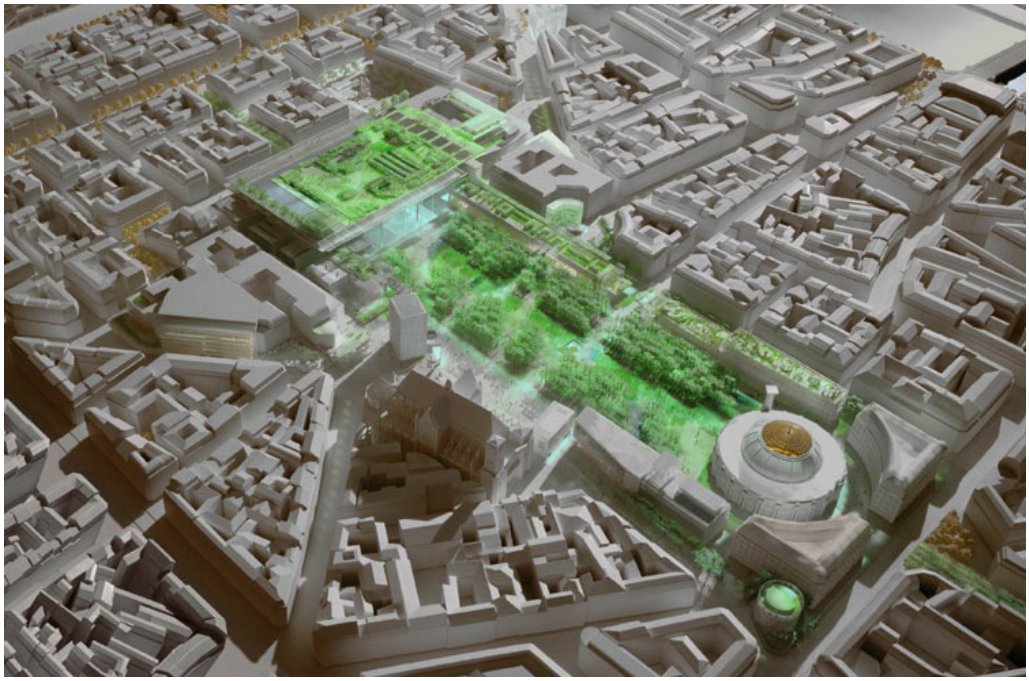

Figure 32 The elevation of the park structure by ascending different levels until the roof levels of Paris as a suggestion of AJN. And this implies questioning of boundaries and relations between architecture and landscape architecture.

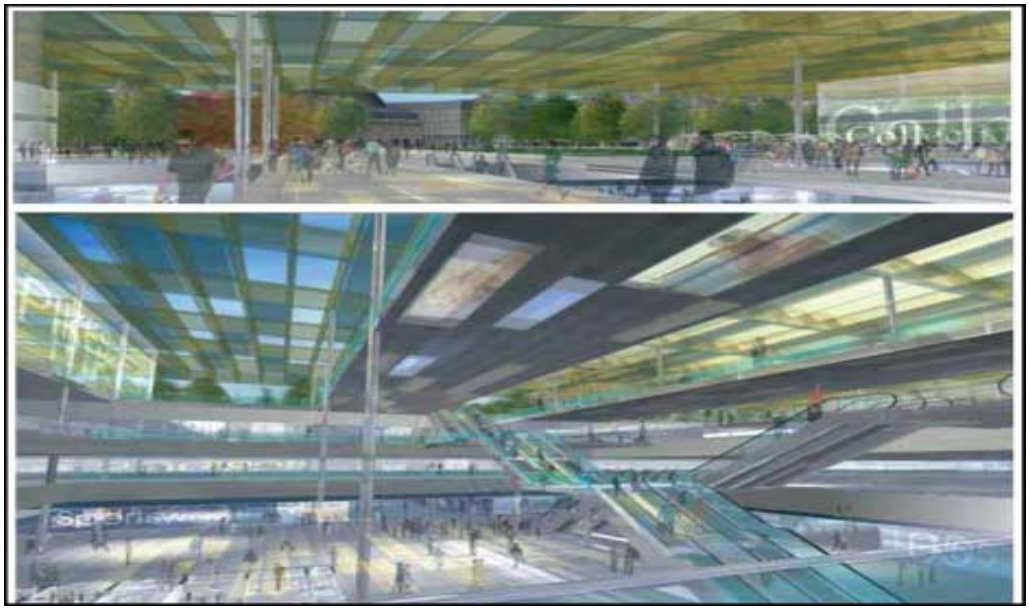

Figure 33 The urban interior space Seura suggests by surrounding the rail system from different levels can also be evaluated as the spatial product of questioning the boundaries and relations among architecture, interior design and city planning.

Figure 34 The semi open shaded urban interior space that AJN suggested by elevating its building on columns, can be evaluated as the spatial imagination of questioning the boundaries and relations among architecture, interior design and city planning.

Figure 35 The Seura's way of covering open urban interior space deepening through the rail system can also be evaluated as questioning the boundaries and relations between architecture and city planning.

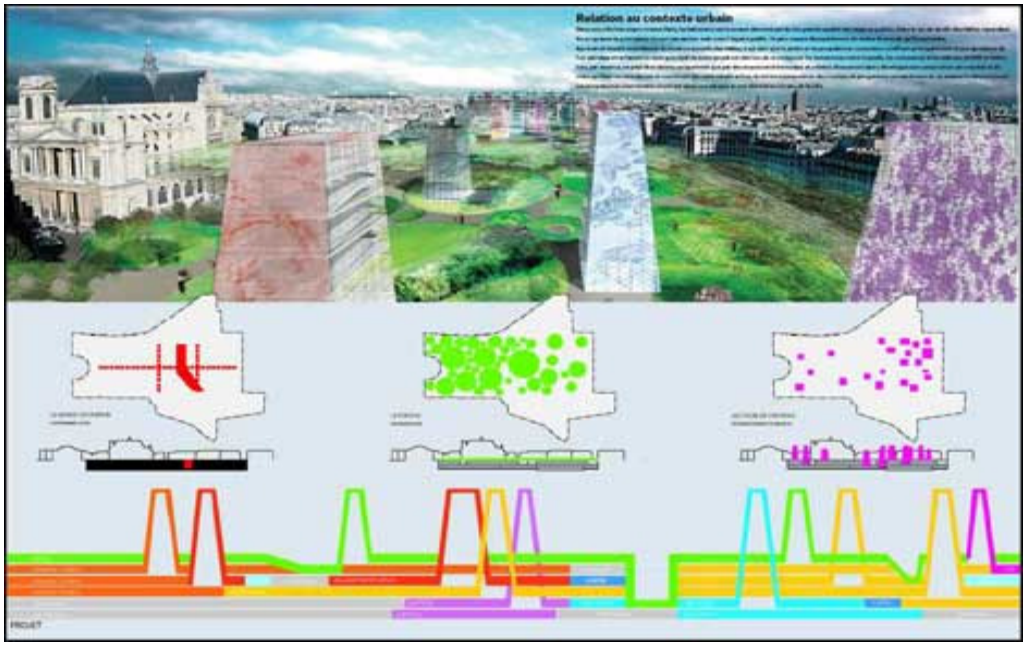

Figure 36 The OMA's way of covering the fluid activities with the green structure having breakdowns and elevations as towers in patches can also be evaluated as questioning the boundaries and relations between architecture and landscape design.

Figure 37 The urban semi opened spaces OMA forms by declining the activities in the fluid imagination can be evaluated as questioning the boundaries and relations between architecture and interior design.

Figure 38 the semi opened urban spaces MVRDV / Winy Maas forms by declining the activities through rail system can be evaluated as questioning the boundaries and relations among architecture, interior design and landscape architecture.

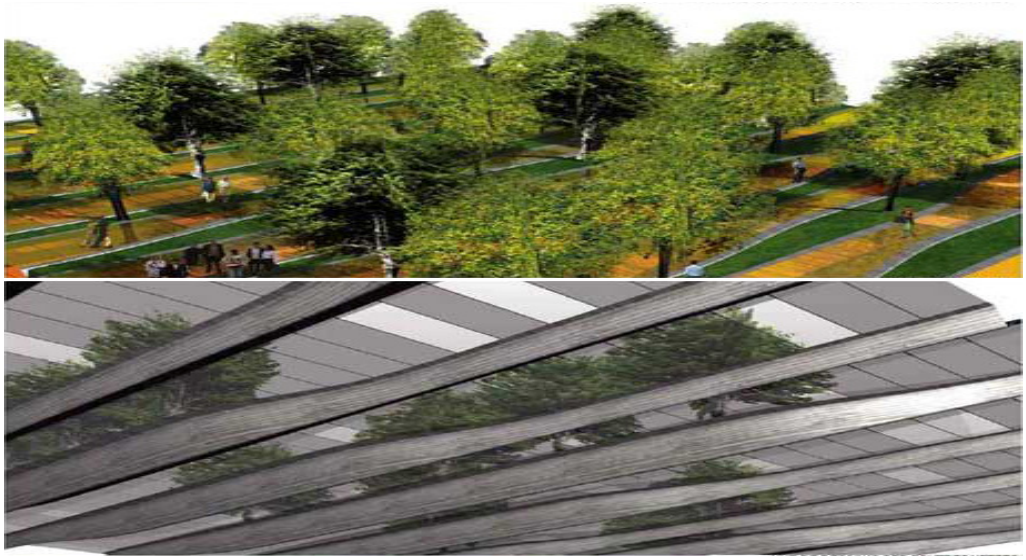

Figure 39 A design of the surface that covers internal activities by MVRDV / Winy Maas can be evaluated as questioning the boundaries and relations between architecture and landscape architecture.

Each team introduced products of restructured disciplinary 'schemata' originated from their 'primary experiences'. This time as different from the previous competition because of all teams' disciplinary richness, deeper communication and interaction and restructuring in the 'schemata' of design disciplines; all these cause deeper boundaries and relational discoveries.

Boundary discoveries: Discoveries related to the boundaries of different design disciplines.

Relational discoveries: Discoveries related to the relations of the design disciplines.

Through these deeper discoveries each team presented unique approaches of spatial equivalents of their restructured 'schemata' by 'primary experiences' they experienced. The common point of these unique approaches can be evaluated as the dissolve of the boundaries

between the disciplines and reorganization of the relations. In this context, on the contrary of the previous approaches, we come across with new experimentations about the beginning and end of landscape design and its relationship with the spatial interpretations of other disciplines. In the same way, with the dissolve of the boundaries of interior design by means of spatial interpretations in other disciplines we come across with innovative readings of interior design. Similarly we face with new experimentations about the beginning and end of city planning and its relationship with the spatial interpretations of other disciplines. These restructurings in the relationships in design domain leads to the new experimentations about the new role of the discipline of architecture.

The interdisciplinary continuity and its integral structure have started to appear in the previous competition and it turns out to be more complex in this example. This time the structure is more likely to be the amalgamation of the spatial responses of the disciplines in design domain.

4.3. New York, High Line (1st Stage) (2004)

In 1930s in order to solve the traffic problems, elevated railway system was constructed in Manhattan West Side of New York. Through the development of interstate routes in 1950s, the railway system lost its importance and in 1980s the train runs were cancelled.[12] In 1999, Friends of the Highline (FHL) was founded in order to conserve and

[12] High Line History [Internet, WWW]. ADDRESS: http://www.thehighline.org/about/highlinehistory.html [Accessed: April 20, 2005].

protect Highline from demolition because of rent compulsions.[13] In 2004 by the organization of FHL, a limited number of invited competitors participated in the competition held concerning the reuse of Highline which is still an untouched green tissue inside the densely used Manhattan.[14] Four multidisciplinary international consortiums in the leadership of the following companies such as Field Operations, Zaha Hadid, Steven Holl and TerraGRAM: Michael Van Valkenburgh Associates proposed projects.

Table 3 Disciplinary composition of the first consortium participated in New York, High Line (1st Stage) (2004) [15], Günay Erdem, 2005

Team	Members	Discipline
Field Operations, Team Lead	James Corner	Landscape Architect, Urban Design
	Tom Jost	Landscape Architect, Urban Design
	Taewook Cha	Landscape Architect, Urban Design
	Lisa Switkin	Landscape Architect, Urban Design
	Michael Flynn, Justine Heilner	Landscape Architect, Urban Design
Diller Scofidio + Renfro	Elizabeth Diller	Architect
	Charles Renfro	Architect
	Hayley Eber, Matthew Johnson	Architect
Piet Oudolf	Piet Oudolf	Horticulture
	Olafur Eliasson	Artist
L'Observatoire	Herve Descottes	Lighting Design
	Zac Moseley	Lighting Design
Buro Happold	Craig Schwitter	Structural, Sustainable Engineering
	J. Cohen	Structural Engineering
	Byron John Stigge	Sustainable Engineering
	Robert Sillman	Structural Engineering, Historic Preservation
	Philip Habib	Traffic Engineering, Zoning and Land Use
Williams Group	David Williams	Commerical Viability, TDR Analysis
GRB	Richard Barbour	Environmental Engineering and Testing
VJ Associates	Vijay Desai	Capital and Operating Cost Estimating
ETM	Timothy Marshall	Public Space Management
DVS Associates	Robert Ducibella	Site Security
Code Consultants	John McCormick	ADA / NYC Code / Regulations
Creative Time	Anne Pasternak	Public Art Programming
Tanya Bonakdar Gallery		Art and Cultural Outreach
Pentagram	Paula Scherr	Graphic Design
Control Point	Paul Jurkowski	Site Surveyor

[13] Friends of the High Line [Internet, WWW]. ADDRESS: http://www.thehighline.org/about/friendsofthehighline.html [Accessed: April 20, 2005].
[14] 2004 Design Team Selection [Internet, WWW]. ADDRESS: http://www.thehighline.org/design/designteamselection2004.html [Accessed: April 20, 2005].
[15] The information about the disciplinary composition of the consortiums is attained from the official web sites of the organizer body of the competition. [Internet, WWW]. ADDRESS: http://www.thehighline.org/design/designteamselection2004.html [Accessed: April 20, 2005].

Table 4 Disciplinary composition of the second consortium participated in New York, High Line (1st Stage) (2004) [16], Günay Erdem, 2005

Team	Members	Discipline
Zaha Hadid Architects, Team Lead	Zaha Hadid with Patrik Schumacher	Architect
	Tiago Correia	Architect
	Ana Cajiao	Architect
	Lawrence Barth	Architect
	Daniel Baerlecken	Architect
	Alvin Huang	Architect
	Marc Fornes	Architect
Balmori Associates	Diana Balmori	Landscape Architect
	Mark Thomann	Landscape Architect
	Emily Abruzzo	Landscape Architect
	Mei Wu	Landscape Architect
Skidmore, Owings & Merrill LLP	Marilyn Jordan Taylor	Architect
	Anthony Vacchione	Architect
	Derek Moore	Architect
	Earl Jackson	Architect
	Erik Boehlo	Architect
studioMDA	Markus Dochantschi	Architect
The Kitchen	Elise Bernhardt	Cultural Advisor
Creative Time	Anne Pasternak	Cultural Advisor
	Peter Eleey	Cultural Advisor
Arup	Mahadev Raman	Mechanical, Electrical, Plumbing
	Charles Sawyer	Mechanical, Electrical, Plumbing
	Markus Schulte	Structure
	Neill Woodger	Acoustics and Audio Visual
	Albert Palumbo	Security
	Fiona Cousins	Sustainability Specialist
	Andrew Wisdom	Transportation Engineer
	Ashraf Taha	Geotechnical Engineering
Halie Light & L'Observatoire International	Herve Descottes	Lighting Design
	Nathalie Rozot	Lighting Design
Iros Elevator		Design Elevator Consultant
Environmental Risk and Loss Control		Hazardous Material Testing
	William Dailey	Building Code Expeditor
Langan Engineering & Environmental Services		Civil Engineering
Davis Langdon Adams	Ethan Burrows	Cost Consultant
Pentagram	Paula Scher	Graphic Design
BCA - Historic Preservation	Ray Pepi	Historic Preservation
Ducibella, Venter & Santore	Bob Ducibella	Special Security
ETM Associates	Tim Marshall	Park Operations

[16] The information about the disciplinary composition of the consortiums is attained from the official web sites of the organizer body of the competition. [Internet, WWW]. ADDRESS: http://www.thehighline.org/design/designteamselection2004.html [Accessed: April 20, 2005].

Table 5 Disciplinary composition of the third consortium participated in New York, High Line (1st Stage) (2004) [17], Günay Erdem, 2005

Team	Members	Discipline
Michael Van Valkenburgh Associates, Team Lead	Michael Van Valkenburgh	Landscape Architect
	Gullivar Shepard	Landscape Architect
	Jason Siebenmorgen	Landscape Architect
D.I.R.T. Studio	Julie Bargmann	Industrial Site Design
Beyer Blinder Belle	Neil Kittredge	Urban Design
Daniel Frankfurt	Jeffrey Han	Structural, Civil and Traffic Engineering
ARO	Stephen Cassell	Architecture
2x4	Michael Rock	Graphic Design
Mathews Nielsen Landscape Architects	Signe Nielsen	Park Systems Consulting
Domingo Gonzalez Associates	Dominigo Gonzalez	Lighting Design
Battle McCarthy	Guy Battle	Sustainability Consultants
Carpenter Norris	David Norris	Daylight Consultants
	Jamie Carpenter	Daylight Consultants
Public Art Fund	Susan Freedman	Arts Programming
ACCU-Cost	Edward A. Mermelstein	Cost Estimating
	James Turrell	Artist
	Luc Sante	Urban Historian
	Charles McKinney	Park Operations Consulting
	Nina Bassuk	Urban Soils and Ecology
	Lynden Miller	Public Garden Design
	Ernesto Mark Faunlagui	Consultant (Ideas Competition Winner)
Rocky Mountain Institute	Bill Browning	Environmental Planning
Leslie E. Robertson Associates	Dan Sesil	Structural Engineering
GEOD	Paul J. Emilius	Land Surveying
Mueser Rutledge	Joel Moskowitz	Geotechnical Engineering
Environmental Planning & Management	Aphrodite Socrates	Hazardous Material

[17] The information about the disciplinary composition of the consortiums is attained from the official web sites of the organizer body of the competition. [Internet, WWW]. ADDRESS: http://www.thehighline.org/design/designteamselection2004.html [Accessed: April 20, 2005].

Table 6 Disciplinary composition of the fourth consortium participated in New York, High Line (1st Stage) (2004) [18], Günay Erdem, 2005

Team	Members	Discipline
Steven Holl Architects, Team Lead	Steven Holl	Architect, Design and Management Lead
	Martin Cox	Architect
Hargreaves Associates	George Hargreaves	Landscape Architects
HNTB Corporation	Theodore Zoli	Existing Structures Engineering
Schall & Russo Planning Works	Alyce M. Russo	Project Management and Public Outreach
Solange Fabião (arTdVision)	Solange Fabião	Artist and Designer
Guy Nordenson and Associates	Guy Nordenson	Structural Engineering - New Structures
	Rebecca Nixon	Structural Engineering - New Structures
ETM Associates	Timothy Marshall	Public Space Management Consultants
Weisz & Yoes Architecture and Urban Design	Claire Weisz	Zoning and Planning Consultant
	Simon Bertrang	Planner
Martin and Mildred Friedman	Martin Friedman	Art Consultant
	Mildred Friedman	Art Consultant
Catherine Seavitt Studio	Catherine Seavitt	Landscape Architect
Renfro Design Group	Richard Renfro	Lighting Consultants
	Andrew Thompson	Lighting Consultants
	Sarah Randall	Lighting Consultants
Ove Arup & Partners	Mahadev Raman	MEPF Engineering
Davis Langdon Adamson	Ethan Burrows	Cost Consultants
AKRF	Bob White	Hazardous Materials
The Bioengineering Group	Wendi Goldsmith	Sustainable Site Development
Metropolis	Frank Fortino	Code Consulting
	Brian Redlein	Code Consulting
Muñoz Engineering	Al Palumbo	Survey
	Michael Guerriero	Survey

Different from other competitions, the competition theme neither covers a single design discipline nor includes the topics of a specific design discipline but presents characteristics of the subject among design disciplines. In this context, the competition can be considered as the deepest questioning of relations and boundaries of design disciplines.

As a result of the nonexistence of each design discipline in holistic way, medium emerges where interdisciplinary continuity can not be mentioned. Medium reveals where the intersections or in other

[18] The information about the disciplinary composition of the consortiums is attained from the official web sites of the organizer body of the competition. [Internet, WWW]. ADDRESS: http://www.thehighline.org/design/designteamselection2004.html [Accessed: April 20, 2005].

words, synthesis of two or more disciplinary ‘schemata’ are main actor in formation of products.

Figure 40 Panels from the presentation plate of Field Operations and Diller Scofidio + Renfro with Olafur Eliasson, Piet Oudolf, and Buro Happold.

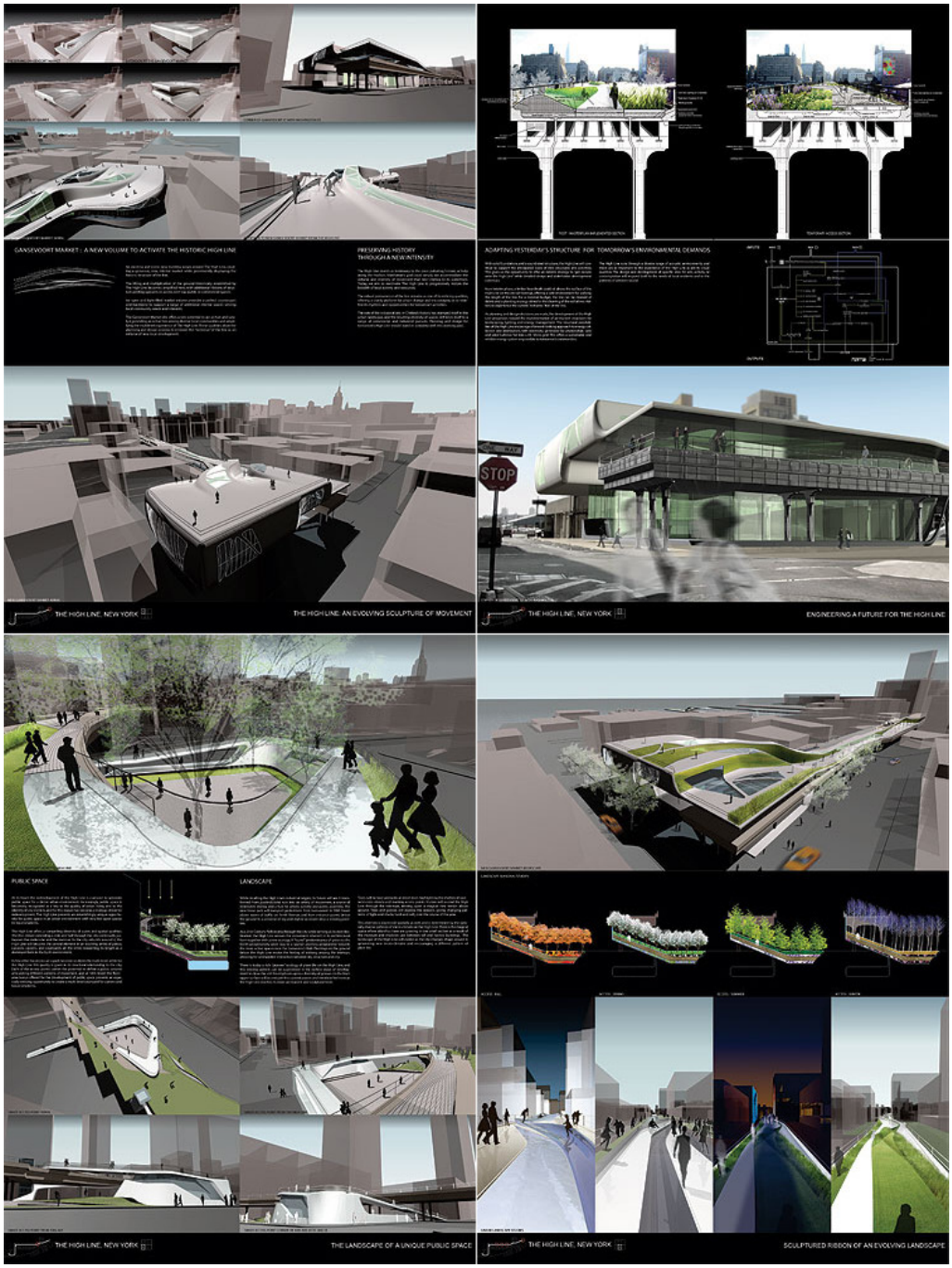

Figure 41 Panels from the presentation plate of Zaha Hadid Architects with Balmori Associates, Skidmore, Owings & Merrill LLP, and studio MDA.

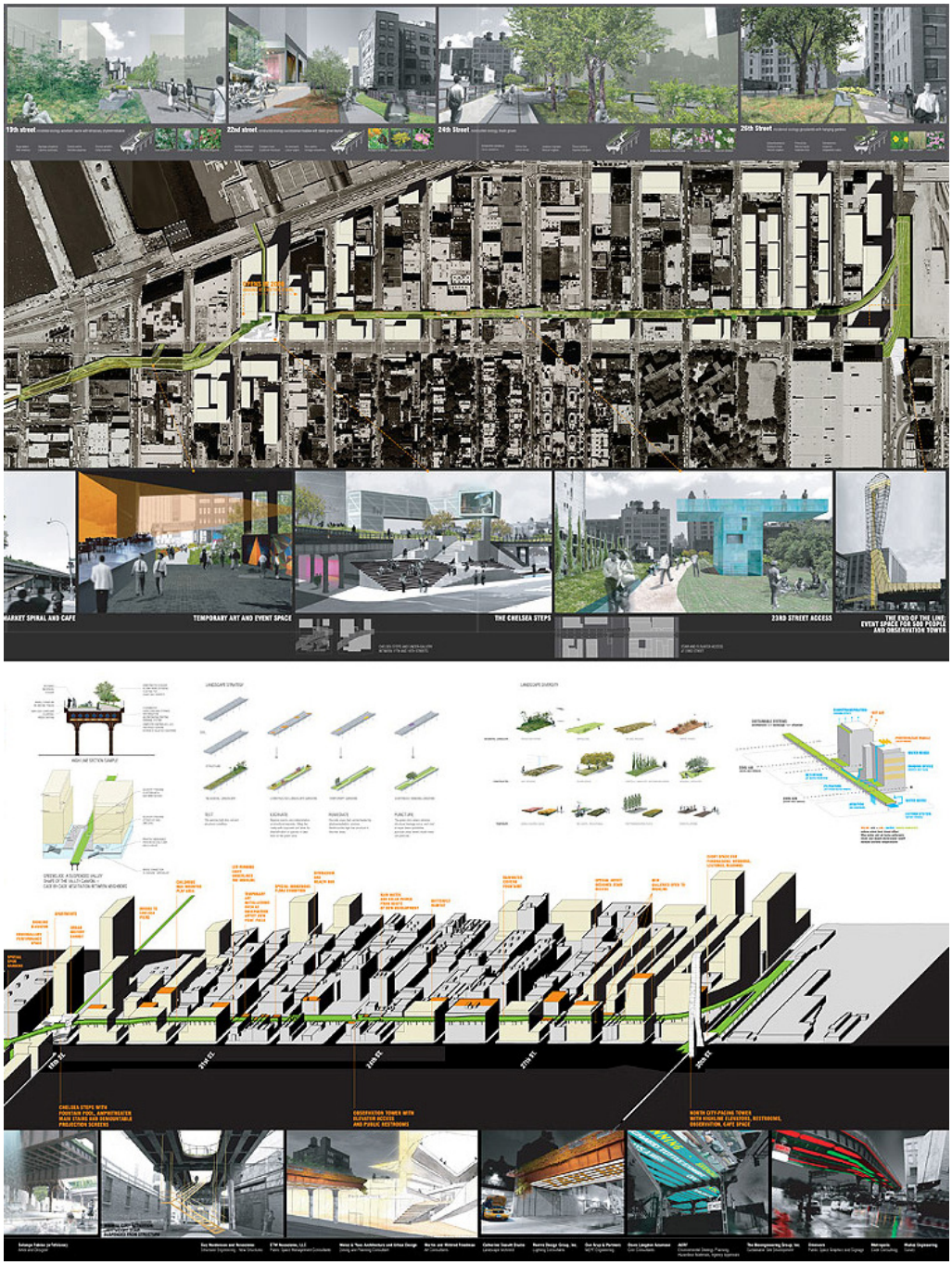

Figure 42 Panels from of the presentation plate of Steven Holl Architects with Hargreaves Associates and HNTB.

Figure 43 Panels from the presentation plate of TerraGRAM: Michael Van Valkenburgh Associates with D.I.R.T. Studio and Beyer Blinder Belle.

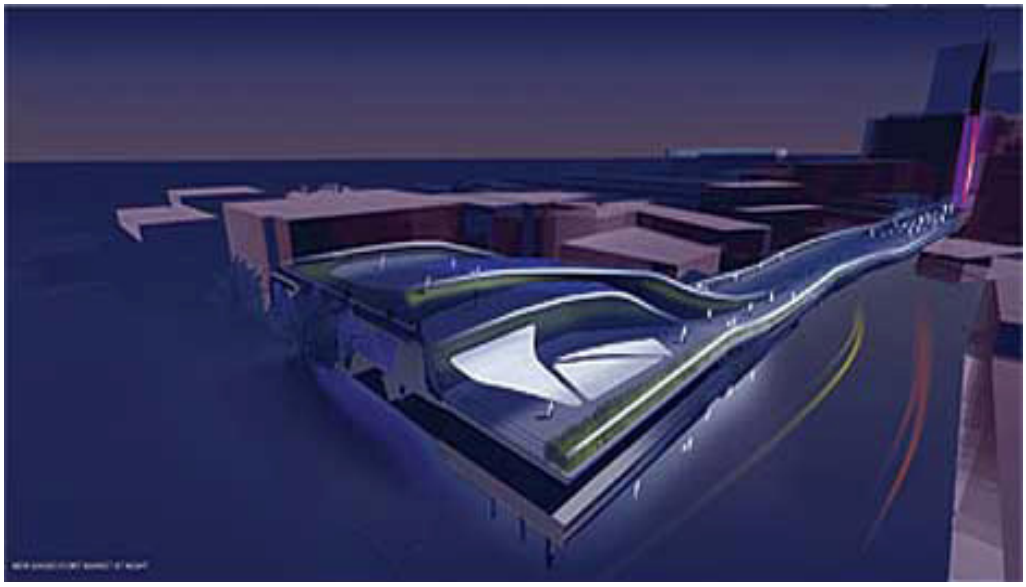

Figure 44 The proposal of Zaha Hadid with Balmori Associates, Skidmore, Owings & Merrill LLP, and studio MDA which carries the implementations of the synthesis of the ‘schematas’ of architecture, landscape architecture and industrial design.

Figure 45 The proposal of Steven Holl with Hargreaves Associates and HNTB which carries the implementations of the synthesis of the ‘schematas’ of architecture and landscape architecture.

Figure 46 The proposal of Field Operations and Diller - Scofidio + Renfro which carries the implementations of the synthesis of the ‘schematas’ of architecture and industrial design.

Figure 47 The proposal of Field Operations and Diller - Scofidio + Renfro which carries the implementations of the synthesis of the ‘schematas’ of architecture, industrial design and landscape architecture.

Figure 48 The proposal of Field Operations and Diller - Scofidio + Renfro which carries the implementations of the synthesis of the ‘schematas’ of architecture, industrial design and city planning.

Figure 49 The proposal of TerraGRAM: Michael Van Valkenburgh Associates with D.I.R.T. Studio and Beyer Blinder Belle which carries the implementations of the synthesis of the ‘schematas’ of architecture, industrial design and landscape architecture.

4.4. Evaluation of the Analysis

Over sample urban design competitions when mutual areas hosting a convergence of the design disciplines are analyzed, design equivalents of the gains to get over the problematics in the design domain are observed in the presented projects.

These equivalents are:

- In the presented projects continuity among different design discipline decisions was provided.
- Presented projects gained holistic structure.

Together with these technical gains, analyzed projects present the marks of transformations in the design understandings caused by reciprocal interaction of the doctrines in the design disciplines.

- Transformations in space understandings.
- Transformations in function understandings.

The transformations in space understandings are reflected as new elaborations for the following topics:

- *Interior – exterior*
- *Open – closed*
- *Horizontal – vertical*

Space characteristics in the framework of the interventions of the design disciplines has transformed from homogeneous to heterogeneous. In other words, each space formation previously seen individual disciplinary dominancy has started to be dissolving and

transforming in to a new one, in which while some parts of the spaces are formed from particular design discipline, the other parts are formed from the other design disciplines.

Another transformation in the space understandings is the dissolve of the strict separation between the left side of the list and its right side it has started to be perceived more easily. In this regard distinction between the start and end of the left side spaces and that of right side spaces becomes hard to be comprehended precisely.

These new elaborations lead to new trials of functional and spatial relations of design disciplines.

- *Buildings of landscape architecture:*
- *Architectural landscapes:*
- *City inside building:*
- *Structures of industrial design:*

In addition to these trials new products implementing not only architectural, landscape, industrial or city planning design characteristics but their intersections as products of the synthesis of the entire design domain has started to emerge.

CHAPTER 5

CONCLUSION

Through the feedback from external resources architecture has always been realizing as an alternative framework the development of new approaches which have gained new dimensions with the implication of fragmentation process perceived in the intellectual system to architecture. Architecture through feedback from these new fields has equipped itself and also instituted new design disciplines in these new fields such as city planning, landscape architecture, industrial design, interior architecture etc.

These design disciplines have gradually developed and become self instituting ones and accumulated expanding knowledge through their own researches. Just like the generality of the intellectual system expanding accumulation of knowledge leads to controlling difficulties in design domain and similar problematics has emerged leading to well accepted compartmental structure.

Problematics of contemporary design domain are listed below:

- Isolation between design disciplines
- Broken relationships between design disciplines
- Lack of overview

Design disciplines in compartmental structure of design domain mostly through consecutive interventions have been giving their products and as end product cities have been taking their contemporary forms. Within the framework of multidisciplinary concept the contemporary form of collaboration of the design disciplines presents limited characteristics as ancillary and complementary roles.

5.1. Change in the Multidisciplinary Concept in Architecture

In some of the contemporary architectural products indications of new form of previously used in different conditions and form interdisciplinary communication, a basic instinct of the intellectual system, have started to appear. In these contemporary products with the marks of ongoing external effects (historical, technological, sociological, artistic etc.) also, the marks of interactions with developed design disciplines have started to be perceived. These interactions different from the previous ones present marks of loosening architecture-based interaction characteristics and transforms into ones where reciprocal shares of their doctrines have been realized. Attitudes presented in architecture products can be evaluated as partial steps of realization of new form of multidisciplinary collaboration in design domain. Because of the change in the characteristics of design medium, in the previous one architecture mostly was responsible by itself for design activity but in contemporary design medium design activity is initiated to be sharing by design disciplines. The scope of realizing the potentials of new multidisciplinary collaboration to overcome problematics in contemporary design domain has shifted

from architecture-based area to the mutual areas of all design disciplines.

5.1.1. Role of Urban Design Competitions

As a transformative force of architecture culture, traditional architectural project competitions mechanism by preserving its unique characteristics takes another important step towards the evolution process and consequently has emerged new competitions such as the competitions of city planning, landscape design, industrial design, interior design, urban design.

The distinction of the urban design competitions when compared to the other design competitions is related with their unique role; creating mutual environment for the meetings of design disciplines that has potential to present innovations for the design domain.

5.1.2. Designing Collectively

At the beginning of the 21st century new multidisciplinary collaboration medium starting to appear under urban design competitions, makes the architecture face with new conditions. The previous design medium, in which design disciplines have taken the ancillary role for the architecture, now shifts to the design medium where all design disciplines including architecture share design activity in equal terms.

5.1.3. Transparency and Continuity Concepts in Design Domain

Sharing design activity leads design disciplines to communicate. Direct communication leads to reciprocal interaction of design disciplines. Reciprocal interaction of design disciplines leads to the transparency in design domain.

Transparency in design domain creates an opportunity to reciprocally transmit knowledge, decisions, doctrines, languages etc to each other, without any restrictions except technical limitations of human mind. As a result, in contrast to previous state a 'continuity concept' emerges as critical transformative characteristic in design domain.

Transparency and continuity concepts in design domain reveal the following potentials:

- Overcoming technical errors of design domain: Design domain gains potential to overcome contrastive parts of the knowledge of the design disciplines.

- Expanding technical limits of design domain: Design domain gains potentials to become a system in which more information can be processed, and then processed information can be reciprocally exchanged to each other and collective decisions can be taken for the main goals.

New multidisciplinary collaboration medium generates potential in contemporary design domain to become more productive and less erroneous. Analysis results of the sample project competitions give support to this determination.

5.2. Future Trajectory

In the light of the evaluations about the future of design domain, following predictions can be made.

New multidisciplinary collaboration medium will intervene more effectively with working procedure of design domain.

Individual working areas of design disciplines will gradually disappear and these areas will be replaced with group working areas for design disciplines.

In this regard, instead of forming cities in small pieces by the individual interventions of the design disciplines, it can be predicted that in the future cities will be formed in large parts by the group of design disciplines.

The role and place of architecture in the future structuring of design domain will become serious discussion topics.

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