RELEVANCE OF TEAM 10

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

MELİH YÜKSEL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF
MASTER OF ARCHITECTURE
IN
THE DEPARTMENT OF ARCHITECTURE

APRIL 2005

Approval of the Graduate School of Natural and Applied Sciences

_____

Prof. Dr. Canan Özgen
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Architecture.

_____

Assoc. Prof. Dr. Selahattin Önür
Head of Department

This is to certify that we had read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Architecture.

_____ _____

Assoc. Prof. Dr. Emel Aközer
Co-supervisor

Asst. Prof. Dr. Berin F. Gür
Supervisor

Examining Committee Members

Assoc. Prof. Dr. Selahattin Önür (METU, ARCH) _____

Asst. Prof. Dr. Berin F. Gür (METU, ARCH) _____

Assoc. Prof. Dr. Emel Aközer (METU, ARCH) _____

Assoc. Prof. Dr. Zuhal Ulusoy (BILKENT UNV.) _____

Instr. Dr. Namık Erkal (METU, ARCH) _____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name: Melih Yüksel

Signature :

ABSTRACT

RELEVANCE OF TEAM 10

Yüksel, Melih
M. Arch., Department of Architecture
Supervisor: Asst. Prof. Dr. Berin F. Gür
Co-supervisor: Assoc. Prof. Dr. Emel Aközer

April 2005, 114 pages

This thesis aims at understanding design strategies developed by Team 10 members and their relevance to contemporary architecture. These strategies are studied by referring to their seminal projects. It is argued that what is significant in the design approaches of Team 10 is the search for patterns of human association or networks of human relations that supports physical structure and organizes social communication. The thesis focuses on the Golden Lane Housing Project (1952) by Alison and Peter Smithson is in order to illustrate how the patterns of association are organized.

Team 10's approach to design suggests a shift of emphasis from specific object to spatial organization of relations. They try to achieve a multi-layered urban and architectural solution. Their projects are infrastructural organizations, in which all layers are combined in a perpetual complex system. The thesis makes an analysis of the Golden Lane Housing Project in order to understand the ways how the layers are organized and associated to each other.

An inquiry into the works of Team 10 members shows that they put particular emphasis on the notions of infrastructural organization, mobility, flexibility, layering, adaptability to change and growth, repetition and variation. The thesis points out that these notions are still relevant in contemporary architectural practices.

Keywords: Team 10, network of association, infrastructure, pedestrian streets, mobility.

ÖZ

TEAM 10 TASARIM STRATEJİLERİNİN GÜNÜMÜZDEKİ ÖNEMİ

Yüksel, Melih
Yüksek Lisans, Mimarlık Bölümü
Tez Yöneticisi: Asst. Prof. Dr. Berin F. Gür
Ortak Tez Yöneticisi: Assoc. Prof. Dr. Emel Aközer

Nisan 2005, 114 sayfa

Bu tezin amacı, Team 10 üyeleri tarafından geliştirilen tasarım stratejilerini ve çağdaş mimarlıkla ilişkisini anlamaktır. Team 10'in tasarım stratejileri, belirleyici projeleri üzerinden çalışılmıştır. Tezde, Team 10'in tasarım yaklaşımlarında önemli olanın, fiziksel yapıyı destekleyen ve sosyal yapıyı örgütleyen insan birlikteliklerinin ortaya koyduğu düzenler ya da bireyler arası ilişkilerin oluşturduğu ağ örgüsünü araştırmak olduğu vurgulanmaktadır. Birliktelik düzenlerinin ne şekilde örgütlendiğini göstermek ve açıklamak için özellikle, Alison ve Peter Smithson tarafından 1952 yılında önerilen Golden Lane Konut Projesi çalışılmıştır.

Team 10'in tasarım yaklaşımı, mimari nesnenin tasarımından çok ilişkilerin belirlediği mekansal örgütlenmelere öncelik verir. Team 10 üyeleri çok katmanlı kentsel ve mimari çözümler üretmeye çalışmışlardır. Projeleri, farklı katmanların tek bir sistemde biraraya geldiği altyapı örgütlenmeleridir. Bu çalışmalarda katmanların nasıl örgütlendiği ve ne şekilde biraraya geldiğini anlamak üzere, Golden Lane Konut Projesi analiz edilmiştir.

Team 10’in çalışmaları üzerine yapılan bu araştırma, altyapı örgütlenmesi, hareketlilik, değişkenlik, devingenlik, esneklik, katmanlaşma, değişim ve büyümeye uyum sağlayabilme, tekrar ve çeşitleme gibi kavramları, özellikle vurguladıklarını göstermektedir. Bununla beraber, bu tez, çağdaş mimarlık uygulamalarında bu kavramların güncelliğini koruduğunu, günümüzle ilişkili ve geçerli olduğunu göstermektedir.

Anahtar kelimeler: Team 10, birliktelikler ağı, altyapı, yaya yolları, hareketlilik.

To My Parents
Esin and Mehmet Yüksel

ACKNOWLEDGMENTS

I would like to express my sincere appreciation to my thesis supervisor, Asst. Prof. Dr. Berin Gür, for her guidance, thought stimulating suggestions and encouragement, which helped me in articulating my thesis research. I offer great appreciation and gratitude to my co-supervisor, Assoc. Prof. Dr. Emel Aközer for her guidance and insight throughout the research. I am also grateful to her in the sense that, Alison and Peter Smithson's notions of "Mat Building" and "Mat Urbanism" were introduced in the graduate design studios Arch 609 and Arch 610 (Advanced Themes in Architecture and Urban Design I and II given by Assoc. Prof. Dr. Emel Aközer, Sinem Çınar and Part-time Instructor Fuat Etker at Middle East Technical University, Department of Architecture in the academic year 2002-2003), which stimulated the initial ideas of my thesis research.

I am thankful to my jury members, Assoc. Prof. Dr. Selahattin Önür, Assoc. Prof. Dr. Zuhal Ulusoy and Inst. Dr. Namık Erkal for their valuable suggestions and criticisms. I want to express my special gratitude to Assoc. Prof. Dr. Baykan Günay for he provided the significant rare sources about my thesis research and for his thought stimulating suggestions and support. I also specially thank to Kenneth Frampton, Nan Ellin and Francis Strauven for they provided me with valuable information about the research.

I offer sincere thanks to my family for their encouraging faith in me as well as their endless support, which helped me throughout my life.

I am also thankful to my friends, especially to Halil Ayoğlu, Buket Demirel and Ş. Ebru İnci, as they supported me with their sympathy, encouragement and criticisms while improving my work. Special thanks go to my friend, Çağla Caner, who always shared my excitements and enthusiasm during my study.

TABLE OF CONTENTS

LIST OF FIGURES

FIGURE

CHAPTER 1

INTRODUCTION

> We have to create architecture and town planning which, through built form, can make *meaningful the change, the growth, the flow, the vitality of the community*.[1]

The aim of this thesis is to study design strategies of Team 10 and their relevance to contemporary architecture. Their design strategies and diagrams will be examined and discussed through the analysis of a selected architectural example, namely Golden Lane Housing Project (1952) by Alison and Peter Smithson. Team 10 members tried to create a suitable "habitat," which maintains "the nitty-gritty reality of everyday life"[2] and social interaction of people. The thesis argues that what is common and significant in the design approaches of Team 10 members is their search for possible patterns of "human association" or networks of human relations. The statement of Alison and Peter Smithson and William Howell, who are among the founding members of Team 10, emphasizes the importance of their endeavor for association in their architecture, "[w]e are of the opinion that we should construct a hierarchy of human associations […]"[3]

This thesis makes a research on design tools and concepts. In this sense it will be an inquiry into design principles and strategies of Team 10, and a search for their relevance to contemporary architectural thoughts rather than being a study of the descriptive history of Team 10. The design principles and strategies that Team 10

---

[1] Alison and Peter Smithson, *Ordinariness and Light*, (Massachusetts: The M.I.T. Press, 1970): 130. [Emphasis mine]

[2] Simon Sadler, "An Avant-Garde Academy," in Andrew Ballantyne, ed. *Architectures: Modernism and After*, (Malden, MA: Blackwell, 2004): 41.

[3] Brian Brice Taylor, "Team 10 + 20," *Architecture D'Aujourd'Hui* 177, (January-February 1975):61.

members developed will be introduced, interpreted and then discussed in relation to contemporary examples.

Team 10 was founded by a group of CIAM members, including Jacob Bakema, Georges Candilis, Rolf Gutmann, William Howell, Alison and Peter Smithson, Aldo van Eyck, John Voelcker and Shadrach Woods, as a critique of CIAM old generation's ideas on architecture and urban planning which insisted on functional zoning plan; an urban scheme organized according to four function hierarchy - dwelling, work, recreation, circulation.

Figure 1.1 Berlin, 1965. Left to right: Woods, Candilis and Van Eyck, Peter and Alison Smithson, Soltan and Bakema (Source: Smithson, Alison eds., Team 10 Meetings 1953-1984, (New York: Rizolli, 1991): 20.)

Concerning Team 10 group, Beatriz Colomina remarks that: "[t]here is a sense of intimacy very far from the formality of the official photographs of CIAM meetings. We see groups deep in conversation, working together, eating together, living together […] family scenes of inheritance, debts, appropriations and rejections […]."[4] They produced various proposals and publications related with the contemporary architecture and city planning during the period between 1953-1984. However, the most effective period of Team 10 Group in Modern Architecture was 1960s and 70s.

[4] Beatriz Colomina, "Couplings," in *OASE* Rearrangements, p.32. Quoted in Dirk van den Heuvel, "The diagrams of Team 10," *Daidalos* 74 (2000): 40-52.

1.1 Contemporary Interpretations of Team 10's Projects

Team 10's search for collective form and formal structuring has influenced the current discussions in architecture and city planning. For instance, today, "mat-building" design strategy is considered an appropriate solution for complex compositional order. In their essay, "Casbah: a brief history of a design concept," Robert Oxman, Hadas Shadar and Ehud Belferman mention that Team 10's influence continues to the contemporary architecture.[5]

In her essay, "Crossed Thoughts on Contemporary City," Sophie Trelcat points out the similarities between the arguments and design strategies of Rem Koolhaas and Team 10 members.[6] She remarks that some key words such as mobility, density, connectivity and programming, flexibility, adaptability to change and growth have the same meanings in their theoretical works.[7]

The diagrams of Team 10 are the most important evidences of their design strategies and their theoretical works on architecture and city planning. In his essay, "The Diagrams of Team 10," Dirk van den Heuvel discusses how Team 10 members tried to solve the problem of configuration and "association," and searched for a new language of form.[8] He emphasizes that a number of similarities can be observed between the works of Team 10 members and contemporary Dutch architects. He highlights the similarity between the works of Team 10 members and particularly Willem Jan Neutelings and Rem Koolhaas. Heuvel states that, multiple layering, infrastructure, landscape fragments, programmatic zones are the essential elements of design both for the members of Team 10 and contemporary Dutch architects.[9]

---

[5] Robert Oxman, Hadas Shadar and Ehud Belferman, "Casbah: a brief history of a design concept," *Architectural Research Quarterly* 6 no. 4 (2002): 321-336.

[6] Sophie Trelcat, "Crossed Thoughts on Contemporary City," *L'Architecture D'Aujourd'hui* 344 (January-February 2003): 46-53.

[7] Trelcat, "Crossed Thoughts on Contemporary City," 2003, pp. 46-53.

[8] Dirk van den Heuvel, "The diagrams of Team 10," *Daidalos* 74 (2000): 40-52.

[9] Heuvel, "The diagrams of Team 10," 2000, p. 49.

In his book *Points and Lines: Diagrams and Projects For The City,* Stan Allen explains "Infrastructural Urbanism," and discusses how infrastructure organizes the city with reference to his several projects.[10] It is possible to draw some parallels between Allen's and Team 10's arguments on architectural design. Generally speaking, in their arguments "infrastructural organizations" are emphasized. By means of infrastructural organizations, both Team 10 members and Allen endeavor to be free from the limitations of a master plan.

Figure 1.2 Recent architectural examples, from top left to bottom right: Buona Vista Masterplan Competition Project by Toyo Ito, Saitama Prefecture University by Riken Yamamoto, Urban Proposal for Sarriguren by Mansilla+Tunon, Paju Book City Housing Project by Young Joon Kim, Zona Franca Office Park by Foreign Office Architects, Mediterranean Hospital by NJIRC and Northern Osaka Station Area by Acebo and Alonso.

[10] Stan Allen, *Points and Lines: Diagrams and Projects for The City*, (New York: Princeton Architectural Press, 1999): 46-57.

There are many contemporary projects that indicate the relevance of the design principles developed by Team 10 members, such as Saitama Prefecture University (Riken Yamamoto, 1995), Kansai Diet Library (Stan Allen, 1996), Musac in Lenon (Mansilla+Tunon Arquitectos, 2001), Zona Franca Office Park (Foreign Office Architects, 2002), Eastern Bipolar Hyperconnected City for Osaka competition (Victoria Acebo and Angel Alonso, 2003), Rhitzomme City (Toyo Ito, 2004) (Figure 1.2).

1.2 Emergence of Team 10

> This new beginning has been concerned with inducing, as it were, into the bloodstream of the architect an understanding and feeling for the patterns, the aspirations, the artifacts, the tools, modes of transportation and communications of present-day society, so that he can as a natural thing build towards that society's realization of itself.[11]

CIAM, *Congres Internationaux d'Architecture Moderne*, is the most important organization for modern movement in architecture, which functioned between the years of 1928-1956. The architectural principles of modern movement and the principles of modern town planning were discussed and designated in CIAM Congresses. These decisions had significant effects on the development of modern architecture and town planning. In 1933 after the fourth CIAM Meeting, the group issued the "Fundamental Postulates of the City," which recommended urban-planning schemes developed on the basis of the separation of different functions -dwelling, work and leisure.[12] The new urban scheme was called "Functional City." Mumford states that, the "Fundamental Postulates of the City" draws the framework of Le Corbusier's views of the Functional city as explained in *The Athens Charter* in 1943. The *Athens Charter* distinguishes four functions in the city dwelling, leisure, work and transportation. The "Functional City" is divided into isolated functional zones, working places, housing and recreation areas.[13]

---

[11] Alison Smithson, eds., *Team 10 Primer*, (Massachusetts: The M.I.T. Press, 1968): 3.

[12] Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, (Cambridge, The MIT Press, 2000): 87.

[13] Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, 2000, p.90.

In his book *Can Our Cities Survive?*, Jose Luis Sert pointed out the need, "to produce an equitable layout, with respect to locations and areas, of the various districts intended for *dwelling*, for *work*, or for *recreation*, as well as to establish *traffic networks*."[14] The Functional City approach had strongly influenced modern city planning and architecture before and after the war.

Annie Pedret mentions how several young members of CIAM (who later formed Team 10) evaluated "Functional City" arrangement as "an anti-urban vision of large towers in a park-like setting, in which the functions of the life were segregated from one another, thus destroying life."[15] These architects criticized the rigid functional zoning of the CIAM, which, as they believed, ignored the cultural-social aspects of design. Eric Mumford states that separation of functions into different zones eliminated any sense of community.[16] Then, with a critical attitude to the rigid functional zoning, a series of approaches developed with the emphasis on social factors and human relations. Diana Agrest states:

> With the waning of the enthusiasm for functionalism in the late 1940s, a series of works appeared which, conscious of the cultural reductivism of the heroic period, were explicitly concerned with the cultural rather than the functional aspect of design.[17]

CIAM's young members criticized modernist urban planning developed within the CIAM discourse, and formulated new ideas concerning the contemporary city. Smithsons explain their complaint about urban planning as follows;

> Each generation feels a new dissatisfaction and conceives a new idea of order. This is architecture. Young architects today feel a monumental dissatisfaction with the buildings they see going up around them.
> For them the housing estates, the social centers and the blocks of flats are meaningless and irrelevant. They feel that the majority of architects have lost

[14] Jose Luis Sert, *Can Our Cities Survive*, (Cambridge, The Harvard University Press, 1942): 222.

[15] Annie Pedret, "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s" Internetional Conference on the Research of Modern Architecture, *Universal versus Individual*, (Jyväskylä, Finland: 30 Aug. - 1 Sep. 2002): [Internet, WWW] ADDRESS: http://www.alvaraalto.fi/conferences/universal/finalpapers/anniepedret.htm [Accessed: 20 Dec 2004]

[16] Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, 2000, p.59.

[17] Diana Agrest, "Design versus Non-Design," in *Architecture Theory Since 1968*, an anthology edited by K. Michael Hays, (Massachusetts MA: The M.I.T. Press, 1998): 205.

> contact with reality and are building yesterday's dreams when the rest of us have woken up in today.[18]

CIAM 9 Congress, at Aix-en-Provence in July 1953, became a breaking point for the CIAM. According to Hilde Heynen, "This congress, the ninth, took place in Aix-en-Provence and was the scene for an ever-more outspoken split between the older generation and the younger members who would eventually form Team 10."[19] In this meeting, younger generation of CIAM members, including Jacob Bakema, Aldo Van Eyck, Georges Candilis, Alison and Peter Smithson, Shad Woods, Giancarlo de Carlo, Ralph Erskine discussed the "universalistic attitude" of CIAM's older generations, namely that of Le Corbusier, Jose Luis Sert. The following year after CIAM 9, Team 10 was born at a Doorn Meeting in Holland. In Doorn, Team 10 members emphasized the necessity for considering every community in relation to its environmental context. They believed that there was a link between the social-cultural aspects of a community and its built environment.

The program of CIAM 10 Congress at Dubrovnik in 1956 was prepared by the members of Team 10. They selected the projects to be analyzed and discussed in the congress according to their emphasis on human relations, and the cultural and social aspects of the projects rather than their functional organization.[20] Reyner Banham states that this is "a radical break in architectural thinking,"[21] which considers relation between physical form and socio-psychological needs of community.

In *Ordinariness and Light,* Alison and Peter Smithsons emphasize that, "the creation of non-arbitrary groupings and effective communications are the primary functions of the planner."[22] Association, neighborliness and identity are the main concerns for

---

[18] Quoted in Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, (New York: Reinhold Publishing, 1966): 71.

[19] Hilde Heynen, Book Review of "The CIAM Discourse on Urbanism, 1928-1960" by Eric Mumford, *The Journal of Architecture* 7 (Winter 2002): 395-397.

[20] Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, 1966, p. 71.

[21] Ibid.

[22] Alison and Peter Smithson, *Ordinariness and Light*, p. 43.

reaching effective communication and non-arbitrary groupings. Alan Colquhoun in *Modern Architecture* points out that "Team 10 wanted an architecture that was expression of community."[23] Team 10 members criticized CIAM's "mechanical concept of architecture," and the idea of the "Functional City." Team 10 indicated the fact that the idea of the "Functional City," the "presupposed the site to be *tabula rasa* thus ignoring existing conditions,"[24] did not take into account human communication and complexity of human life. According to Enis Kortan,

> The city was conceived as an industrial product with the emergence of industrial age. The complexity of urban life was ignored. The city was designed like a machine where each part functioned separately […] Thus the functions were first isolated then classified to be relocated in different spaces which did not overlap.[25]

In his article "Toward a Theory of the Architectural Program" Anthony Vidler states that, "[…] the first generation of modern masters was criticized by Team 10, among others, as narrow and anti-humanist in its functionalism."[26] Team 10 members tried to create a new urban environment for the modern society. In her essay "Rebel with a Cause: Dutch architect Aldo van Eyck restored humanist values to modernist practice," Liane Lefaivre remarks that "these figures were united by their critical attitude toward the vacuousness and callousness of 1950s culture and by their commitment to serving the postwar need to create humane habitats through new design techniques."[27]

---

[23] Alan Colquhoun, *Modern Architecture*, (Oxford, Oxford University Press, 2002): 218.

[24] Annie Pedret, "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s" Internetional Conference on the Research of Modern Architecture, *Universal versus Individual*, (Jyväskylä, Finland: 30 Aug. - 1 Sep. 2002).

[25] Enis Kortan, *Çağdaş Üniversite Kampusları Tasarımı*, (Ankara, O.D.T.Ü. Mimarlık Fakültesi, 1981) 117. Quoted in Baykan Günay, "History of CIAM and Team 10," *Journal of the Faculty of Architecture* 8 (1988): 35.

[26] Anthony Vidler, "Toward a Theory of the Architectural Program," *October* 106 (2003): 59-75

[27] Liane Lefaivre, "Rebel With a Cause: Dutch Architect Aldo van Eyck restored humanist values to modernist practice," *Architecture* 88 no.9 (September 1999): 81-85.

1.3 The Notion of "Association"

Team 10 criticized the idea of the "Functional City" of the CIAM and searched for new forms of architectural organization and new design principles, which consider human relation or "human association" in the whole complex and the city.

According to the Oxford Dictionary, *association* means "a connection or relationship between people or organizations." In the vocabulary of Team 10, "association" connotes the relationship between the physical form and socio-psychological needs of (individuals of) a community. It is in that sense that association should be understood both in physical and social terms. For Team 10 members, it is the interrelation not only between the parts that make the whole physical structure or individuals that make the community, but also and most importantly, between the community and its built environment.

Team 10 members searched for the patterns of association, which support physical structure and social communication. *Network of association* refers to the spatial matrix of relationships to achieve well-organized human relations and communications.

In the works of Team 10, the *network of association* is a pedestrian circulation network that arranges not only transportation but also and most importantly associations among individuals in the whole structure. Pedestrian circulation network provides different choices to all pedestrian or individuals. Alison and Peter Smithson considered pedestrian street network as not only for transportation but also for communication. At the CIAM 9 Congress, Smithsons emphasized the importance of the street network, "the street and the network of streets has to be seen as the arena in which social relationships were played out."[28] "Streets-in-the-air" that Smithsons proposed for their Golden Lane Project (1953), separates basic movement systems, which are pedestrian and vehicular. "Streets-in-the-air" that is built above the ground level, is free from vehicular road network, and provides appropriate places for "human association."

[28] Alison Smithson, ed., *Team 10 Meetings 1953-1984*, (New York: Rizolli, 1991): 60. Quoted in Mark Wigley, "Network Fever," *Grey Room* 04 (Summer 2001): 105.

In the design process, it is the *network of association* that defines formal characteristics of the projects. It helps to compose a comprehensible structure, enhances the clarity of organization, and supports social communication. The network comprises rules of the complex compositional order in order to be capable of growth and change according to future programmatic needs.

1.4 The Method of Analysis

Team 10 members' essays on architecture and city planning, and in parallel to these essays their projects and proposals were studied. As a result of the analyses of the projects and the readings of their writings, it is realized that the main focus of their work is the idea of "association." They tried to employ the purposive potential of "association" to constitute the spatial organizations (that can accommodate changing needs of individuals) instead of reaching the impressive finished form.

"Association" is a technical term that is elucidated by Team 10 members. In their proposals, they search for the ways of "human association," how to set a "network of human relations." In their book *Ordinariness and Light*, Alison and Peter Smithson point out:

> To the social psychologist society presents primarily a picture of *a network of human relations.* The strength and direction of those relationships not only determine the coherence and effectiveness of society-they also are the primary source of individual satisfaction. The function of social planning is primarily to strengthen and direct these relationships […][29]

Team 10 members developed their own strategies to organize human associations, such as Smithsons' "Mat Building" and "Dualistic Planning Strategy," Aldo van Eyck's "Configurative Discipline" and Candilis, Josic and Woods' "Stem" and "Web." When we scrutinize these design strategies and their projects, we can recognize emphasis on the following issues:

- Spatial organization instead of finished forms,
- Infrastructure,
- Repetition and variation of individual units,
- Interconnection, connectivity and matrix of relations,
- Layering, "a layered-up city"
- Mobility, flexibility, growth and change,
- Programming and a flexible program.[30]

Team 10 members understand and explain the contemporary city and its relation with human life with the concepts of "mobility, flexibility, growth and change." These concepts become important considerations for their design processes. Team 10 members try to achieve a flexible environment, which has to have a clear and comprehensible organization. They try to define a network of "association" in order to achieve man-made field with several layers. Smithsons mention "a *layered-up city* with servicing facilities and circulation routes entirely below ground, permanently locked into the systems above."[31] They approach the city as a many-layered field. There are permanent layers and transient/temporary layers that make the whole complex composition. A Permanent layer, which is composed of circulation systems for both pedestrian and vehicular traffic, is significant to provide clarity to a complex organization. On the other hand, transient/temporary layer are composed of places that house various functions (such as residences, shops, restaurants etc.). The method of analysis will be more elaborated in the fourth chapter.

The projects will be studied mainly to reveal "association" patterns, to understand how a network of "association" is developed, and how design tools are used to achieve association.

---

[29] Alison and Peter Smithson, *Ordinariness and Light*, 1970, p.42. [emphasis mine]

[30] See also Stan Allen, "Mat Urbanism: The Thick 2-D," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 118-126, and in his book, *Points and Lines: Diagrams and projects for The City*, (New York: Princeton Architectural Press, 1999).

[31] John Lewis, eds., *Urban Structuring: Studies of Alison and Peter Smithson*, (London: Studio Vista, 1967): 80.

1.5 Structure of the Thesis

In this introductory chapter, the emergence of Team 10 as a group as against to CIAM is mentioned. The meaning of the term "association," which is significant to the works of Team 10 is explained.

In the second chapter, firstly "human association" that was introduced by Alison and Peter Smithson at the ninth CIAM Congress in 1953 will be explained. Scale of "association" diagram, which was developed on the basis of Patrick Geddes' valley section, and introduced in their first meeting at Doorn in 1954, will be described. Their search for "patterns of association" will be discussed.

In the third chapter, in light of discussions on "human association," Team 10 members' design strategies, "Mat-Building" and "Dualistic Planning Strategy" by Alison and Peter Smithson, "Configurative Discipline" by Aldo van Eyck, "Stem" and "Web" configuration by Josic, Candilis, and Woods, will be examined. In this part, the thesis will focus on how Team 10 members design their complex compositional orders. It should be noted that these strategies do not propose different solutions for architecture and city planning, yet they are complementary to each other.

In the fourth chapter, Team 10 members' thoughts on contemporary city will be examined since they developed their design strategies by taking into account the needs of the contemporary city. In particular, Golden Lane Project by Smithsons (1952) will be analyzed. Smithsons' Golden Lane Project stands as an exemplary project that questions the contemporary city. It is the first example in which Smithsons employed pedestrian network as an infrastructure that contributes to the achievement of "association" of the different layers of the program.

In the fifth chapter, the relevance of Team 10's architectural approach to recent architectural practices and thoughts is discussed. In particular, Stan Allen's ideas on "Infrastructural Urbanism" will be related with Team 10's approach.

CHAPTER 2

THE CONCEPT OF ASSOCIATION IN THE WORK OF TEAM 10

> If we don't work for an architecture expressing three-dimensional human behavior in total life, architects will lose their natural function in society.[32]

In the previous chapter it was mentioned that Team 10 members criticized the rigid functional zoning supported by the CIAM old members that did not respond to the complexity of urban life. Therefore, they searched for alternative design strategies that consider "human association."

2.1 "Human Association"

> We are of the opinion that we should construct a hierarchy of human associations, which should replace the functional hierarchy of the *Charte d'Athens*.[33]

Human association refers to the relation among individuals, between individuals and the society, and also individuals and their environment. According to Pedret, "the nature of human association was, in their opinion, inextricably linked to the physical, social and occupational conditions of a particular place."[34] They believe that environmental conditions play an influential role in human relations or "human association."

Architecture is an important medium for a dynamic and harmonious relationship between humans and their environment. In his essay, "The Dutch Contribution:

---

[32] J.B. Bakema, cited in Oscar Newman, CIAM' 59 in Otterlo (Stuttgart 1960), 10. Quoted in Cornelis Wagenaar, "Jaab Bakema and the Fight for Freedom," in *Anxious Modernisms* ed. by Sarah Williams Goldhagen and Rejean Legaul, (Cambridge, The MIT Press, 2000): 266.

[33] Taylor, "Team 10 + 20," 1975, p.61.

[34] Annie Pedret, "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s," 2002.

Bakema and Van Eyck," Francis Strauven defines architecture as "the obvious medium to express and define the relations between people and between each individual and 'total space'."[35] The character of society and its environment should be comprehended by the designer in order to better organize the relationship between the individual and the environment. Bakema states that an architectural design should support "the realization of a new society: a society establishing patterns of open human relationships, a society no longer based on classes and ranks but [a society] in which each member is given the opportunity actually partake in culture."[36] In their projects, Team 10 searched for relationships, interactions and "associations" between parts and the whole, between the individuals and their environments.

Pedret points out that "[Team 10 members] proposed a planning methodology that would take into account difference between things and people - social, cultural, historic, geographic, climactic, and ethnic."[37] She calls this methodology, which they developed as an alternative to the CIAM's approach, as an individualist challenging the CIAM's universal manner. In their first meeting in which they declared Doorn Manifesto or "Statement on Habitat," Team 10 members emphasized the importance of particularity. For them, each community should be considered as a particular social and physical complex.

It is emphasized that the aim of the city planners and architects is to provide social cohesion and communication in community and environment.[38] In their book, *Ordinariness and Light*, Alison and Peter Smithson highlight the significance of social cohesion. They state that,

> Real social groups cut across geographical barriers, and the principal aid to social cohesion is looseness of grouping and ease of communication rather than the isolation of arbitrary sections of the total community with impossibly difficult communication. [39]

[35] Strauven, "The Dutch contribution: Bakema and Van Eyck," 1992, p.48.

[36] Ibid.

[37] Annie Pedret, "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s," 2002.

[38] Alison and Peter Smithson, *Ordinariness and Light*, 1970, p. 43.

2.2 Association Diagram of Team 10

> The form of the city must correspond to the net of human relations as we now see them.[40]

After CIAM's ninth congress, a number of like-minded colleagues among the younger members of the CIAM, Smithsons, Van Ginkel, Jacob Bakema, Aldo Van Eyck and John Voelcker, met in Doorn, Holland in 1954. This was the Team 10's first meeting. In this meeting Smithsons presented a diagram showing the "valley section" that was taken from an article of Sir Patrick Geddes who combined in his works different disciplines, city planning and sociology, in order to understand better the human habitat. Geddes' Valley Section diagram constitutes the base of the Team 10 members' idea that "human association" depends on the physical and social properties of particular place (Figure 2.1).[41]

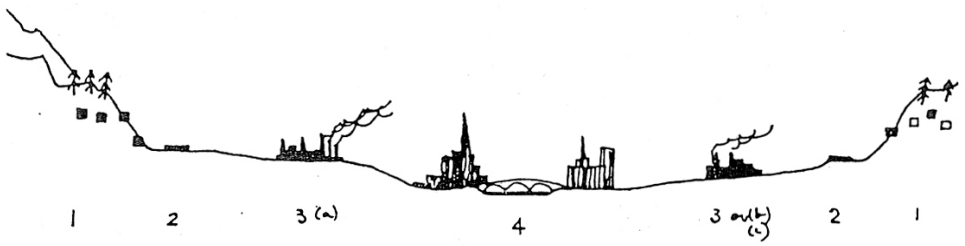


Figure 2.1 Sir Patric Geddes' Valley Section. (Source: Alison Smithson, eds., *Team 10 Primer*, (Massachusetts: The M.I.T. Press, 1968): 75.)

Geddes' Valley Section demonstrates different patterns of settlements. With this section, he also identified different social groupings. Geddes placed occupants according to the characteristics of the location, such as fisherman at the water level, gardeners and farmers on the lower slopes, and woodmen and miners at the highest point of the section.[42]

---

[39] Ibid.

[40] Smithson, eds., *Team 10 Primer*, 1968, p.57.

[41] Annie Pedret, "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s," 2002.

On the basis of Geddes' valley section diagram, Smithsons prepared their scale of association diagram with detached houses, villages, towns, and cities. The association diagram shows the different patterns of human land use in the valley section (Figure 2.2). The diagram represents different levels of human association along the valley section, from the dense city level to the loose populated highland level. They thought that this valley section could be a worthwhile example for city planning. According to this diagram, "it was wrong to build the same house in all of these locates as is done by now."[43] In Doorn Manifesto, Smithsons state that:

> We must consider every community as a *particular total complex*…In order to make this comprehension possible; we propose to study urbanism as communities of varying degrees of complexity.[44]

As it is implied in this quotation, according to the Team 10 members, architects should consider particular social, cultural and environmental factors in order to organize particular place. They are these factors that constitute the identity of communities, and define the patters of "human associations."

To better understand and establish the pattern of human association, there should be a continuous objective analysis and observation of the community structure, its environment or habitat, and its change in time. "Particular total complex" is a highly considerable keyword for Team 10 design strategies. Pedret explains,

> The word "particular" emphasized *specificity* over universality; "total" implied qualities of *wholeness* instead of autonomy; and "complex" suggested *integration and relations* between things instead of the infinity inherent in a grid.[45]

---

[42] Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, 2000, p.239.

[43] Ibid., 240.

[44] Joan Ockman, *Architecture Culture 1943-1968, A Documentary Anthology*, (New York: Rizzoli International Publications, 1993): 183.

[45] Annie Pedret, "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s," 2002.[Emphasis mine]

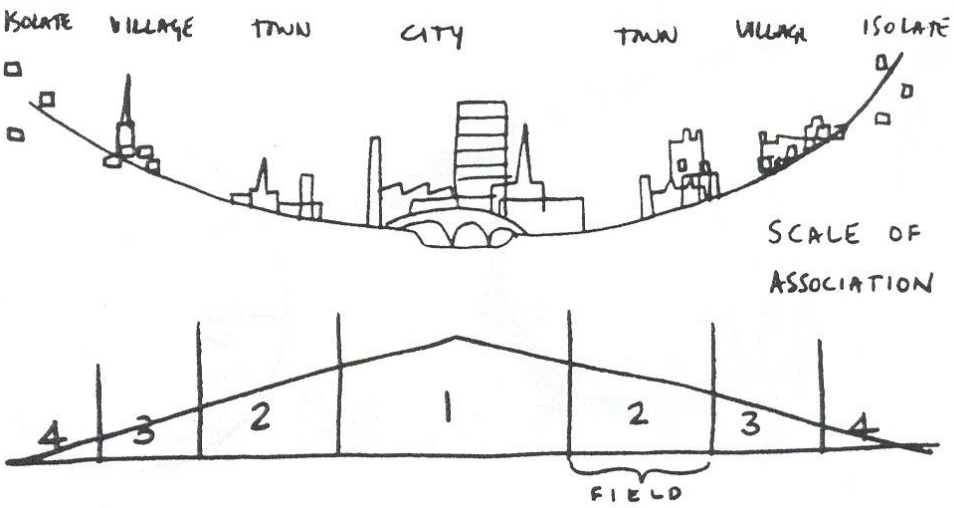


Figure 2.2 Smithsons' Scale of Association Diagram, related with the their valley section, (Source: Sophie Trelcat, "Crossed Thoughts on Contemporary City," *L'Architecture D'Aujourd'hui* 344 (2003): 48.)

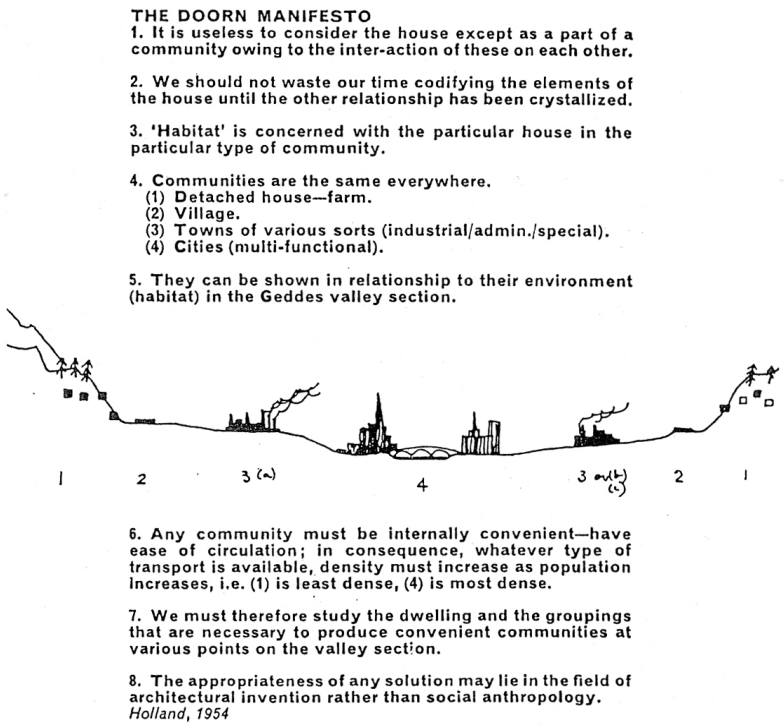


Figure 2.3 Doorn Manifesto of Team X, Valley Section. (Source: Smithson, eds., *Team 10 Primer*, 1968, p.75.)

Pedret interprets ATBAT's (Atelier de Batisseurs) housing project, Nid d'abeilles, for Muslims in Morocco as an architectural example of the idea of "particular total complex," since it proposes specific solutions according to habitant's social values and climatic properties of North Africa (Figure 2.4). In this project, architects tried to establish a collective dwelling system considering the need for outdoor living space. At CIAM 9 congress at Aix, this housing project was gained much attention from participants, especially Team 10 members. ATBAT members including Candilis and Woods inspired from traditional forms of settlement in North Africa, and in this housing project they tried to unite the cultural-social values of North African Culture with the principles of modern architecture and city planning.

Figure 2.4 "Nid d'abeilles" Housing Project for Muslims by ATBAT. (Source: Reyner Banham, The new Brutalism, Ethic or Aesthetic?, (New York: Rinhold Publishing, 1966): 59.)

At the Doorn Meeting, the conflict between the new generations' organizational approach related with "human association," and the functionalistic approach of the old generations became explicit. After the Doorn Meeting, the younger generation of CIAM members, namely Team 10, prepared the content of CIAM 10 to be held in

Dubrovnik in 1956. This was the last CIAM Congress, and marked the end of CIAM. For CIAM 10 meeting, Team 10 members worked on "*the problem of organic unity*", "*the problem of mobility*", "*the problem of growth and change*", and "*urbanism as part of the habitat*".[46] The congress at Dubrovnik showed that an urban scheme based on functional separation could not solve the problems of the city.

2.3 Hierarchy of Associational Elements

At CIAM 9 congress at Aix in 1953, *"La charte de l'habitat",* Smithsons presented their "Urban Reidentifitation" grille. In their presentation, they pointed out their opposition to the CIAM's functional separation, and explained the Golden Lane Housing Project in order to illustrate their emphasis on association. Joan Ockman states that, "[Smithsons organized] their scheme according to a 'hierarchy of human association' instead of the four function hierarchy promulgated at Athens -dwelling, work, recreation, circulation."[47]

In "Urban Reidentifitation" grille, Smithsons illustrated the various levels or elements of "association," which are house, street, district and city. For them, houses are the most important elements of the city, because they organize the duality of family and society or private and public in the city. The grille shows their consideration of the relationship between part and whole (Figure 2.5). In this grille, house is approached as the basic unit of the whole city. In their presentation, Smithsons state:

> This grille is concerned with the problem of identity. It proposes that a community should be built up from a hierarchy of associational elements and tries to express these various levels of association (THE HOUSE; THE STREET; THE DISTRICT; THE CITY) algebraically. It is important to realize that the terms used [,] Street, District, etc. [,] are not to be taken as the reality but as the idea and that it is our task to find new equivalents for these forms of association in our new, non-demonstrative society.[48]

---

[46] Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, 2000, p.239.

[47] Joan Ockman, *Architecture Culture 1943-1968, A Documentary Anthology*, 1993, p. 181.

[48] Alison Smithson, The Emergence of Team X out of CIAM: Documents (London, 1982), p.7. Quoted in Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, 2000, p.234.

In their presentation, they combined Nigel Henderson's photographs of colorful human figures in the slum's street with their Golden Lane project. In this project, they developed "the idea of street," which highlighted house-street relationship.

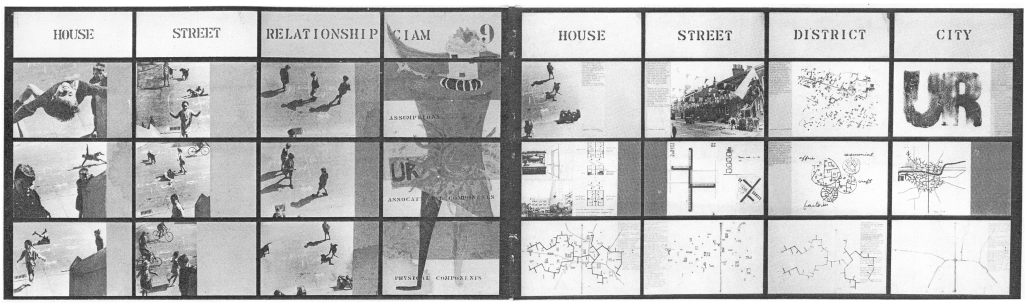


Figure 2.5 Smithsons' Urban Reidentification Grille with Nigel Henderson's photographs at CIAM 9 (Source: Sophie Trelcat, "Crossed Thoughts on Contemporary City," *L'Architecture D'Aujourd'hui* 344 (2003): 46-47.)

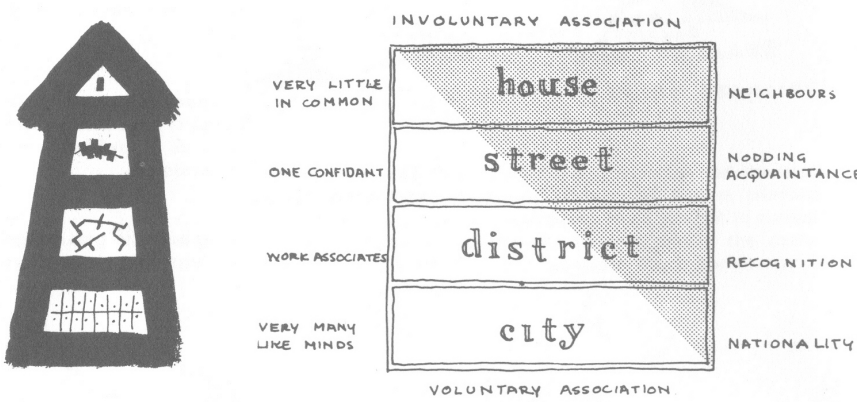


Figure 2.6 "Human Association" Level (Source: John Lewis, ed., *Urban Structuring- Studies of Alison and Peter Smithson*, 1967, p. 20.)

Smithsons' patterns of "association and identity" evolved from their observation of street life in Bethal Green, a slum area, in the east London and Arabic cities. Most of the Team 10 members examined the practice of everyday life in traditional cities and

the role and importance of the streets in the everyday life. They came to a point that streets could be used not only for transportation but also for supporting social interaction. This is the foremost reformation of the modern city plan after the "Functional City." Street is one of the most important components of the city, which appears as a unifying element for the individuals who constitute the whole community, and the parts forming the whole complex.

Beside Smithsons, for other Team 10 members too, "identity" and "identification" are the important issues of "human association." It is discussed that the identity of the units is important since it helps define possibilities of interrelation or "association" in the whole complex. Bakema states:

> Any architectural or town planning proposals which ignore these conditions, [social, economic, geographical, political and plastic], and do not give MAN HIS IDENTITY fail to meet the requirements of LIFE. This identity was to be found in the residential unit, in the community unit, in the town, and in the region, in other words in all stages of multiplication.[49]

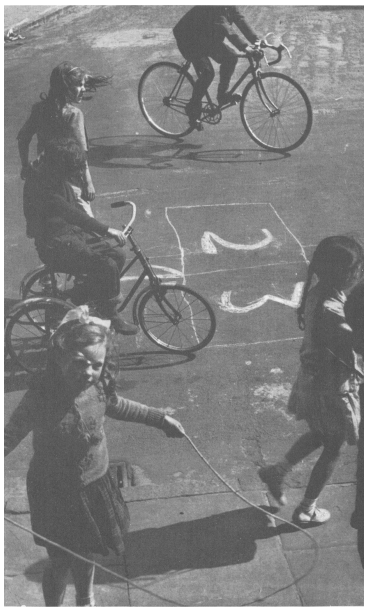


Figure 2.7 The life of the slum streets, Photograph by Nigel Henderson. (Source: John Lewis, ed., *Urban Structuring- Studies of Alison and Peter Smithson*, 1967, p. 9.)

[49] Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, 2000, p.237.

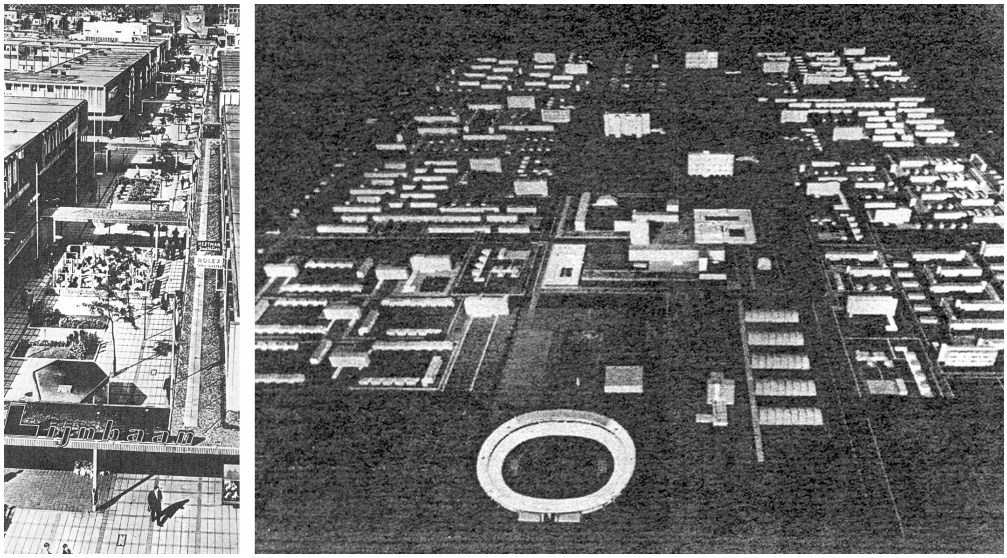


Figure 2.8 From left to right: Lijnbaan Mixed-Used Complex (1953); Alexanderpolder extension of the Rotterdam (1956) by Jacob Bakema. (Source: Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 17; Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, (Cambridge, The MIT Press, 2000): 252.

At the Doorn Meeting in 1954, Smithsons presented the diagram of the hierarchy of associational elements, which was developed on the basis of "Urban Reidentifitation" grille presented at Aix. The diagram indicates the levels of association, which are respectively house, street, district and city, and also the levels of interaction between the individual person and his/her social and physical environment (Figure 2.6). Considering this particular diagram, Mumford implies that an entire city can be organized as a series of interconnected social circles, "starting with the family home and extending up through the neighborhood to the city as a whole."[50] Here, Mumford emphasizes the different scales of association from private to public domains. According to Mumford, Bakema's projects like "the Alexanderpolder extension of Rotterdam, where there is constant interplay between the private and public domains" and Lijnbaan mixed-used complex in Rotterdam are examples to realize the different

[50] Eric Mumford, "From CIAM to Collage City: Postwar European Urban Design and American Urban Design Education." In Urban Design: Practices, Pedagogies, Premises. [Internet, WWW].ADDRESS: http://www.arch.columbia.edu/gsap-online/files. html [Accessed: 20 Dec 2004]

scales of human association (Figure 2.8).[51] Alexander Tzonis and Liane Lefaivre states that the design ideas of Lijnbaan project is

> a new layout based on a movement structure which responded to Bakema's call for architecture to 'express openness in human relationships [...] By incorporating utilitarian, social and recreational activities within a linear pedestrian movement system, they [Bakema and Van den Broek] created the earliest example of a new conceptual design framework promoting social interaction and the maximization of choice.[52]

2.4 Search for "Patterns of Association"

> To discover a new implies discovering something new. Translate this into architecture and you'll get new architecture-real contemporary architecture. Architecture implies a constant rediscovery of constant human qualities translated into space. [53]

In her book, *Ordinariness and Light*, Alison Smithson's query, "Can we assume there is any ideal pattern of association?" is important to understand Team 10 members' aim in architecture and city planning. While they were evolving new design strategies, they tried to find new formal structures or organizations to accomplish an "ideal pattern of association" or network of relations. According to Team 10 members, a pattern of association should correspond more to "the networks of social relationships [rather] than the existing closed patterns of finite spaces and self-contained buildings."[54] It should support social communication. A pattern of association should also provide a proportionate relation between parts and the whole structure; it should define how parts are to be related to the whole. Smithsons pointed out that "[w]e hold that for every form of association there is an inherent pattern of building, and of course the patterns of building create forms of association."[55] Thus, pattern of

---

[51] Ibid

[52] Alexander Tzonis and Liane Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time," in Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 127.

[53] Smithson, ed., *Team 10 Primer*, 1968, p.20.

[54] John Lewis, ed., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 29.

[55] Ghuihua Judy Chung, ed., *The Charged Void: Urbanism, Alison and Peter Smithson*, (New York: The Monacelli Press, 2005): 32.

association should become a response to effective human relations, individual-society relations (in social sense) and harmonious complex composition, part-whole relations (in physical sense). In other words, Team 10 members tried to search for ideal patterns of association or design organizations that correspond to human relations, associations and communications rather than separation or isolation.

Team 10 members think that "horizontal living" create better opportunities for communication and association than "vertical living." Suburban residential models with separate high-rise blocks are examples of vertical living. These separate high-rise blocks have the "isolationist character."[56] Alison Smithson compares the horizontal and vertical organization, and she mentions the shortcomings of vertical living,

> [A] form of vertical living in which the family is deprived of its essential outdoor life, and contact with other families is difficult if not impossible on the narrow balconies and landings that are their sole means of communion and communication. Furthermore outside one's immediate neighbors the possibilities of forming the friendships, which constitute the extended family are made difficult by complete absence of horizontal communication at the same level and the ineffectiveness of vertical communication.[57]

Team 10 members consider horizontally weaved organizations as a solution for patterns of association. For instance, Smithsons' Golden Lane project is a horizontally weaved structure. In this project, the street was considered as the most important element of horizontal living to form communication and association in the complex. Smithsons used network of pedestrian streets as a suitable pattern of association, which supplies a well-balanced relation between house (basic part) and city (whole).

> The idea of street has been forgotten. It is the idea of street, not the reality of street, that is important-the creation of effective group-spaces fulfilling the vital function of identification and enclosure making the socially vital life-of-the-street possible.[58]

---

[56] Ally Ireson, "Introduction," *City Levels,* edited by Ally Ireson and Nick Barley, (London, Birkhauser, 2000): 10.

[57] Smithson, eds., *Team 10 Primer*, 1968, p.80.

[58] Ibid.

Most of Team 10 members used the street network as an ideal pattern of association, and street as a unifying element. Streets combine places that have different functions, such as shops, houses, offices, post boxes and telephone kiosks. Referring to the human association diagram, by which Team 10 members tried to understand the scale of social interactions in the city, the network of pedestrian-streets becomes a crucial constituent of "human association." The association diagram (Figure 2.6) becomes crucial for Team 10 members in constituting their own design strategies and realizing their projects in a way to integrate an individual person to his/her social and physical environment (e.g. Candilis, Josic, Woods' Berlin Free University project in 1963 and Van Den Broek and Bakema's Tel Aviv-YAFO Central Area Project).

Team 10 members were influenced by several avant-garde artists, namely Arp, Richard P. Lohse and Piet Mondrian who attempted to achieve a complex compositional order and equilibrium between parts and the whole of a work.[59] Studying these artists and their works, Team 10 members realized that "reciprocal relationship and immediate interactions" between parts are more important than an "inherent hierarchical structure." On the basis of these artists' works, Team 10 members tried to understand "association" and interaction between parts in their projects.

The concept of "the aesthetics of number," inspired by the Swiss constructivist Lohse, is an important notion for Team 10 members. In Aix, Aldo van Eyck stressed the importance of "the aesthetics of number" to solve the problems that "result through the standardization of constructional elements; through the repetition of similar and dissimilar dwellings within a larger housing unit [...]"[60] Van Eyck applies Lohse's concept of "the aesthetics of number" in order to organize multiple units in harmonious relation, and in turn to constitute his pattern of association. Mondrian's statement on the relations between parts in compositional order influenced Aldo van Eyck: "The culture of particular form is approaching its end. The culture of

[59] Strauven, "The Dutch contribution: Bakema and Van Eyck," 1992, p.48.

[60] Aldo van Eyck, *The Story of Another Idea*, (Washington University Art and Architecture Library), 23. Qoted in Eric Mumford, "The Emergence of Mat or Field Buildings," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 49.

determined relations has begun."[61] This statement emphasizes the importance of relation among parts that form the whole.

For the organization of settlements, Bakema focuses on the importance of "visual groups." Pedret explains the "visual group" as follows:

> ... [T]he 'visual group' was a basis for organizing settlements, and a way of providing identity in a situation where units were repeated and in the face of endless expansion and prefabrication. It was a tool for avoiding monotony in low-cost housing by differentiating the mass into visually identifiable units in which different types of housing and different functions, such as work and recreation, were integrated.[62]

Bakema saw "the architect as an artist whose work should help to integrate the individual person into his social and physical environment, thus resolving the fundamental dichotomy between the individual and the collective."[63]

The designs of Team 10 members are formal expressions of association. Instead of organizing the city by dividing it into the four autonomous zones, they believe that achieving "human association" and constituting networks of association should be the first step of architectural design and city planning. By means of "association" Team 10 members try to match the physical structure of the city with its social use.

---

[61] Strauven, "The Dutch contribution: Bakema and Van Eyck," 1992, p. 49.

[62] Annie Pedret, "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s," 2002.

[63] Cornelis Wagenaar, "Jaab Bakema and the Fight for Freedom," in *Anxious Modernisms* ed. by Sarah Williams Goldhagen and Rejean Legaul, (Cambridge, The MIT Press, 2000): 272.

CHAPTER 3

DESIGN STRATEGIES OF TEAM 10

> Architecture is based on use, space and form.
> Use has to be social.
> Space has to be universal.
> Form has to be total.[64]

Team 10 members were against the strict separation of functions that creates "mechanical environments" based on "analytical and classificatory system."[65] Instead of separation, they aimed to develop new urban forms and architectural strategies based on "human association." The complexity of urban life was one of the main considerations of their proposal. Architecture and town planning were conceived as organizers and generators of human activities. In their projects, they were mainly concerned with spatial expression of complex human activities, instead of ideal forms or ideal geometry.

As Colquhoun points out, "the articulation of public and private domains, *zones of community and zones of privacy*, is the basis for the physical expression of any social organization."[66] The organization of human activities and relations between parts and the whole, the private and public is the most important design issue for Team 10.

Each Team 10 member developed his/ her own approach to design, however, each directed his/her effort to how to accomplish "association" in design. In doing so, they developed and employed similar design tools, such as pedestrian networks (as a means of organizing association among both the programmatic elements and the individuals),

---

[64] Jacob Bakema, "New Architecture and the Next Step," *Forum*, 1947. Quoted in Alison Smithson, ed., *Team 10 Primer*, 1968, p.41.

[65] Colquhoun, *Modern Architecture*, 2002, p.218.

repetition and variation of units (as a means of formal organization that opens the way for possibilities of growth, change and flexibility).

In order to organize "association," Team 10 members developed various spatial organizational strategies, for instance Smithsons' "mat-building" and "dualistic planning strategy, Van Eyck's "configurative discipline", and Woods' "stem and web." Actually these strategies do not propose different solutions for architecture and city planning, yet they are complementary to each other. The "configurative discipline," and "stem" and "web" constitute the basis of "mat-building." At the basis of these design strategies there is the organization of association.

3.1 "Mat-Building" and "Dualistic Planning Strategy" by Smithsons

In her 1974 essay, "How to Recognize and Read Mat-Building," Alison Smithson explains morphological properties of "mat-building design strategy," and gives examples of this design strategy. In fact, the formulation of mat-building as a design strategy in this essay is based upon the Smithsons' presentation at Aix in 1953 and other Team 10 members' thoughts and works in 1950s and 60s.

In a brief definition, "Mat-building" is considered as a horizontal organization of programmatic units. Mat-building is one of the important solutions, which is developed as an alternative to the CIAM's "Functional City," for the problem of finding the ideal "patterns of association." It was first introduced and explained by Alison Smithson in her instructive essay:

> Mat-building can be said to epitomize the anonymous collective; where the functions come to enrich the fabric, and the individual gains new freedoms of action through a new and shuffled order, *based on interconnection, close-knit patterns of association*, and possibilities for growth, diminution and change.[67]

---

[66] Jurgen Joedicke, *Candilis, Josic, Woods*, 1968, p. 159. [Emphasis mine]

[67] Alison Smithson, "How to recognize and read Mat-Building," *Architectural Design* 44 no.9 (1974): 573. [Emphasis mine]

In her article on mat-building, in order to illustrate mat-building design strategy, along with their Berlin Haupstadt competition project and Golden Lane proposal, Alison Smithson mentions also about the other Team 10 members' projects, namely Candilis, Josic, Woods' Berlin Free University, Frankfurt competition project and Toulouse competition project, and Aldo van Eyck's Amsterdam Orphanage Building and Nagele School project.

These projects present a similar approach that is based on "*interconnection, close-knit patterns of association, and possibilities for growth, diminution and change*."[68] They have similar morphological properties: high-density, low-rise, continuous systems employing additive and repetitive property and close-knit patterns that support interconnection and association of parts. For instance, the system of pedestrian "streets-in-the-air" that is free from vehicle circulation appears as the constituent element of the Golden Lane housing project (1952) (Figure 4.2) and Haupstadt competition project (1958) (Figure 3.1). Pedestrian "streets-in-the-air" is a continuous horizontal system supporting human relations or association and communication. It organizes well-balanced relationships between units that constitute the whole structure, such as housing units and shops. In another words, it is the pedestrian circulation network that enables the relationships among the parts (programmatic elements) that compose the whole complex, and generates the places where individuals can communicate with each other.

In her essay, "How to Construct an Architectural Genealogy; Mat-Building... Mat-Buildings... Matted-Buildings," Timothy Hyde discusses whether mat-building is an object or an operation. Hyde explains the formal characteristics of "mat-building" design strategy:

> [...][M]at-building consists of horizontal weave of programmatic and circulatory elements, a play of solids and voids stabilized within a legible order; the exterior conditions are purely contingent, the incidental results of overlaps and interconnections at the interior.[69]

[68] Smithson, "How to recognize and read Mat-Building," 1974, p.573. [Emphasis mine]

[69] Timothy Hyde, "How to Construct an Architectural Genealogy, Mat-Building…Mat-Buildings…Matted-Buildings," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 105.

It should be noticed that mat-building is a design process, which organizes relation or association of programmatic units.

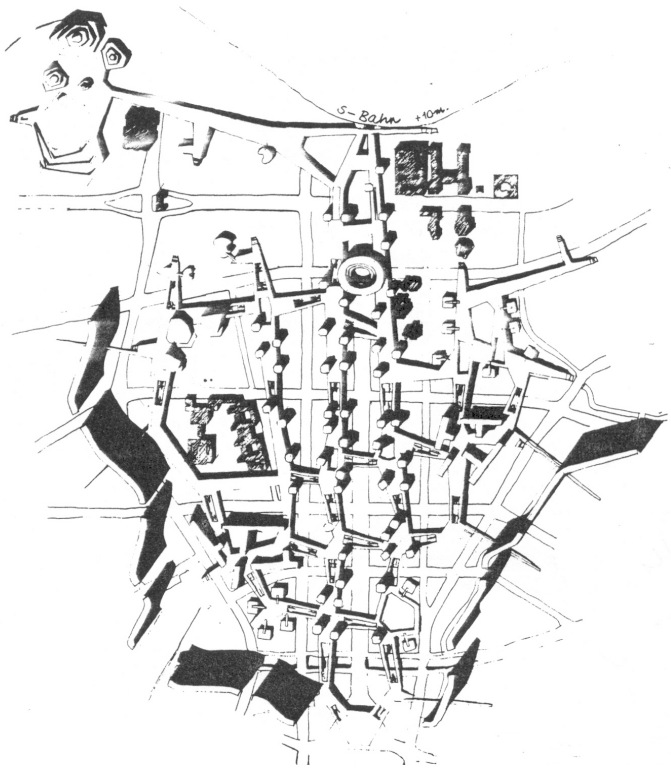


Figure 3.1 Alison and Peter Smithson's Hauptstadt Proposal for Berlin, in 1958. (Source: Ibid., 56)

Hauptstadt proposal for Berlin City Center is an example for "mat-building" design strategy. In this project, Smithsons proposed "pedestrian platform net" that grows up organically over the existing orthogonal city's vehicular road system (Figure 3.1). The network of pedestrian platform is a medium for organizing different programmatic units and "human association." It is in this sense that pedestrian network defines a "pattern of association" for achieving a comprehensible structure and clearly identified programmatic units, such as cinemas, trade centers, markets on the ground level and shops, roof gardens, restaurants on the pedestrian platform level.

Smithson emphasizes flexibility of mat-building; "Its organization is not rigid. The attempt has been made to create an open aesthetic, capable of variations and of growth, in which change of social objectiveness can find an outlet."[70] Smithsons' statement is an evidence for the fact that mat-building is not a fixed object, it is an architectural process or organization.

Actually, the system of "conglomerate order," which is introduced by Smithsons as a design tool, better explains the significant attributes of mat configuration. The principal definition of conglomerate is a number of things or parts that are put together to form a whole. According to Smithsons, "The Canon of Conglomerate Ordering,"

> […] has a capacity to absorb spontaneous additions, subtractions, technical modifications without disturbing its sense of order; indeed such changes enhance it… [It] has a thick building mass, wide but not very high and penetrated from the top for light and air…[It] has faces which are all equally considered; no back, no front, all faces equally engaged with what lies before them: the roof is another face…[It] has a variable density plan and variable density section. [71]

These principles are the characteristic of mat-building strategy. Mat concept, which was applied to the architectural design in 1950s and 60s, has played a significant role on contemporary architecture and urban planning, since "it gives new freedoms to architectural design of complex programs."[72] For Hasim Sarkis, "mat" as a design strategy is very suitable for programmatically complex buildings, such as schools, universities, hospitals, and multi-functional complexes: "the mat answers to the recurring calls for efficiency in land use, indeterminacy in size and shape, flexibility in building use, and mixture in program."[73]

Besides Smithsons, other Team 10 members employed the "mat-building" design strategy. For instance, Bakema and Van den Broek in their Tel Aviv-YAFO Central

---

[70] John Lewis, ed., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 59.

[71] Helena Webster, eds., *Modernism without Rhetoric; Essays on the work of Alison and Peter Smithson*, (London: Academy Edition, 1997): 143-151.

[72] Hasim Sarkis, "The Paradoxical Promise of Flexibility," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 81-89.

[73] Hasim Sarkis, "Introduction," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 13-17.

Area Project (Figure 3.2), and Josic, Candilis Woods in Frankfurt Center Competition used the system of pedestrian "multiple-deck." Architects proposed a low-speed pedestrian level with small squares above the high-speed vehicular traffic.

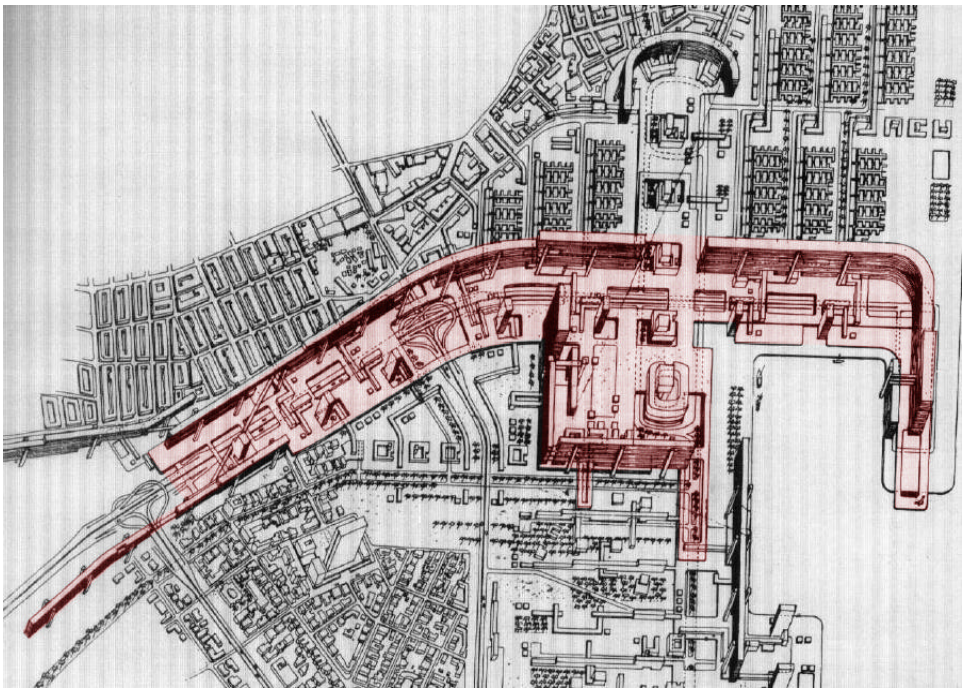


Figure 3.2 Proposal for Tel Aviv-YAFO Central Area Project by Bakema and Van den Broek. (Source: "The Work of Team 10," Architectural Design, August, 1964, pp.373-375)

Social dimension brought forth by the mat-building design strategy is a considerable contribution to the city life. Mat-building design strategy supports "human association" by means of places for social cohesion and communication. Mat-building supports the desire of Smithsons for city planning that is "the creation of non-arbitrary groupings and effective communications," and makes possible to simultaneously organize both different programmatic units (and their future changes,) and network of social relationships.

Alan Colquhoun emphasizes that, "[…] there was a gap between spontaneous human association and its formal representation. For the Smithsons, however, this problem could be overcome by means of a dualistic planning strategy that developed road and communication systems as the urban infrastructure.[74] "Dualistic planning strategy" refers to the development of an urban infrastructure, which simultaneously provides both circulation and communication. Here, it should be said that, it is urban infrastructure that defines or forms patterns of association or networks of relations. Alison Smithson emphasizes that:

> In general, those town-building techniques that can make the community more comprehensible are: (1) *to develop the road and communication systems as the urban infrastructure*. And to realize the implication of flow and movement in architecture itself… [75]

Dualistic planning strategy is epitomized in Smithsons' Hauptstadt proposal for Berlin City Center and their Golden Lane proposal. "Pedestrian platform net," which is free from vehicular traffic, is utilized as an urban infrastructure that merges circulation and communication system (Figure 3.3). Alison Smithson states that "[t]he street is not only means of access but also an arena for social expression."[76]

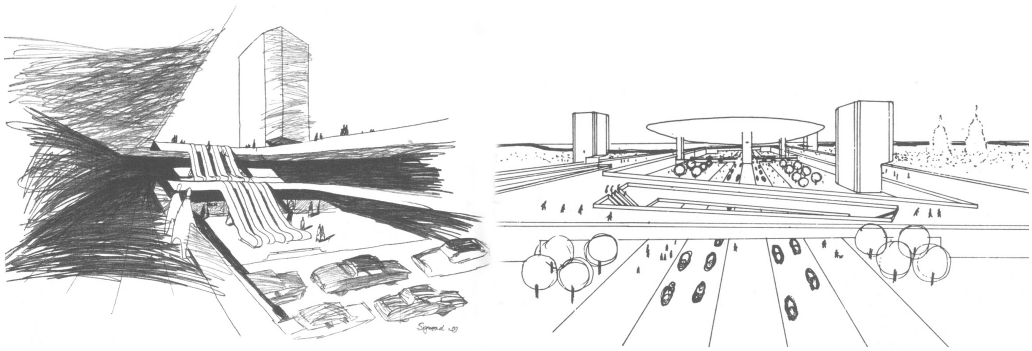


Figure 3.3 Relation between "pedestrian platform net" and existing street. (Source: Ibid., 52, 53)

[74] Colquhoun, *Modern Architecture*, 2002, p.219.

[75] Smithson, ed., *Team 10 Primer*, 1968, p.48. [Emphasis mine]

[76] John Lewis, ed., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 15.

Mat building, which is not a description of architectural form yet implies a design process, organizes association. As it is stated by Hyde, "Instead of defining distinct object, mat-building weaves itself into the surrounding context, creating a building that performs like a city, or transforming part of the city into a building."[77] Therefore, mat-building is more than a finished object or simple addition, repetition and horizontal extension of individual units.

3.2 "Configurative Discipline" by van Eyck

> "We must continue the search for the basic principles of a new aesthetic and discover the aesthetic and human meaning of number."[78]

One of the important figures of Team 10 is Aldo Van Eyck. He tried to insert the concept of multiplicity and "human association" into his design strategy by means of a "configurative discipline." Aldo van Eyck clearly recognized the need to address the particular social and cultural conditions. He gave particular emphasis to the cultural-social aspects of physical environments.

As stated by Joan Ockman, "*configurative discipline*," which is "an idea Van Eyck developed, is a design method in which part and whole reinforce each other's identity in a relationship of reciprocity [...]"[79] "Configurative patterns" and "structures" are important media for Aldo van Eyck and "Forum group" architects.[80] Van Eyck was one of the editorial staff of the Dutch review "Forum" journal. "Forum group" studied architecture and city planning after the Second World War, and criticized the functionalist tendency in urban planning. Instead, they were in favor of "a new

---

[77] Timothy Hyde, "How to Construct an Architectural Genealogy, Mat-Building…Mat-Buildings…Matted-Buildings," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 104-117.

[78] Aldo van Eyck, "Steps toward a Configurative Discipline," *Forum*, 3 (August 1962): 81-93. Quoted in Joan Ockman, *Architecture Culture 1943-1968, A Documentary Anthology*, (New York: Rizzoli International Publications, 1993): 353.

[79] Joan Ockman, *Architecture Culture 1943-1968, A Documentary Anthology*, 1993, p. 347.

[80] Forum is a Dutch architectural journal. Its editorial group included Van Eyck, Bakema, Hertzberger.

aesthetic of the social, of a neohumanist ethic."[81] In her essay, "Architecture as Artifice," Karin Jaschke states, "... *Forum* was promoting a new and more humane understanding of modern architecture, inspired most importantly by van Eyck's 'story of another idea' and the corresponding configurative design."[82]

Forum Group also studied architectural examples from historical sources and primitive cultures, namely American Southwest Pueblos, primitive villages and "Casbah" in order to explore their structural, spatial and geometrical orders and their relations with inhabitant's culture.[83] As a member of Forum Group, Van Eyck was influenced by "Structural Anthropology." He examined different structural orders of vernacular societies and organizations of their settlement. He used the past as a source of knowledge of complex compositional orders, and with the help of these sources he searched for new design strategies in architecture and city planning.[84] Oxman, Shadar and Belferman state,

> For the Forum group the access to precedent was through the medium of configurative order. Underlying structure might be expressed as an abstracted two-dimensional pattern or three-dimensional spatial matrix. Preferred anthropological of historical sources were those which provided examples of geometrically complex structuring orders. [85]

The Middle Eastern "Casbah" is one of the familiar examples for dense and compact organizations where various functions such as shops, houses, and public spaces, are integrated. The organization of "casbah" refers to additive and repetitive principles of composition in a continuous order.[86] Casbah organization that helped to create continuous and integrated urban forms related with community's life and human needs, was employed as a tool to create new design strategies by van Eyck.

---

[81] Maristella Casciato, "'Forum': architecture and culture in the early 1960s,"*Casabella*, 606 (November 1993): 48.

[82] Karin Jaschke, "Architecture as Artifice," *Journal of Architecture*, 6 (Summer 2001): 135.

[83] Oxman, Shadar and Belferman, "Casbah: a brief history of a design concept,"2002, pp.321-336.

[84] Oxman, Shadar and Belferman, "Casbah: a brief history of a design concept,"2002, p.321.

[85] Ibid., p.321.

[86] Ibid., p.323.

In "configurative discipline," relations between parts in three dimensional order are more important than the visible impressive forms. Architecture is an important medium to define the relations between each individual to form a total space. Van Eyck's "configurative discipline" is related with the organization of (total) space, where the "patterns of open human relationships" are achieved.[87] According to van Eyck, because of the standardization and repetition of the elements, in the projects there emerge aesthetic problems, which are to be considered and solved.[88]

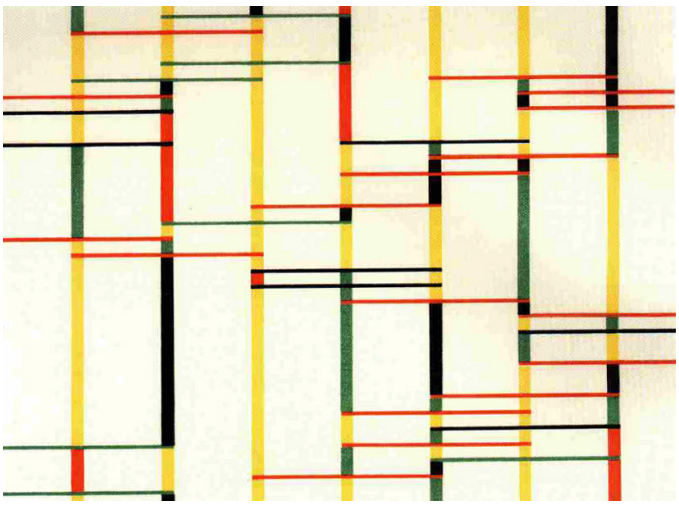


Figure 3.4 Richard P. Lohse, Composition II, 1946, (Source: Dirk van den Heuvel, "The diagrams of Team 10," *Daidalos* 74 (2000): 41.)

In his search for a new language and fundamental principles of forms, van Eyck referred to the works of avant-garde artists, namely Piet Mondrian and Richard P. Lohse.[89] Mondrian's notion of "*the culture of determined relations*," and Lohse's way of bringing multiple units into a whole influenced van Eyck's search for additive and repetitive principles of architectural composition.

[87] Strauven, "The Dutch contribution: Bakema and Van Eyck," 1992, p.49.

[88] Eric Mumford, "The Emergence of Mat or Field Buildings," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 49.

[89] Strauven, "The Dutch contribution: Bakema and Van Eyck," 1992, p.49.

> Seeking further fundamental principles for new language of form, Lohse discovered the *plastic meaning of the large number*. By putting uniform into rhythm, he was able to establish the balance required by multiplicity. The language of form which people have used to bring the singular and the particular into harmony is no longer useful for bringing the multiple and the elementary into balance.[90]

"Configurative discipline" is a new tool to break the rules of the conventional building form and to constitute new configurations that establish balance between the parts and the whole. It is a complex compositional spatial order. It sets the compositional principles of how to add and repeat the independent units, and in turn defines the various layers of relationships. It is in this sense that, "configurative discipline" is related to "casbah organization." To solve the complex problem of post war urban development, Strauven emphasizes that "[both Aldo van Eyck and J. Bakema] conceived the new settlement as structures composed of several levels of relationships in which part and whole were connected through a structural similarity."[91]

In explaining "configurative discipline," Oxman, Shadar, and Belferman refer to "labyrinthine clarity," which was used by van Eyck. In their explanation, configurative discipline appears as a tool that stands against typology:

> Configurative discipline was a means of achieving what van Eyck referred to as 'labyrinthine clarity'. This latter concept essentially referred to the spatial complexity realized by employing additive, repetitive, principles of composition. Through this it was deemed possible to transcend the very limitations of building typology, to go beyond the slab block and other conventional building forms. *The spatial matrix replaced the concept of the building type*. [92]

The additive and repetitive potential of "configurative discipline" provides flexible structures that respond shifting programmatic needs. Van Eyck's Amsterdam Orphanage Project (Figure 3.5, 3.6),[93] his pupil Piet Blom's Noah's Ark (an urban design scheme

---

[90] Aldo van Eyck, in: *Forum*, June, 1952. Quoted in Dirk van den Heuvel,"The Diagrams of Team 10," *Daidalos* no: 74, 2000, pp.40-52. [Emphasis mine]

[91] Strauven, "The Dutch contribution: Bakema and Van Eyck," 1992, p.49.

[92] Oxman, Shadar and Belferman, "Casbah: a brief history of a design concept," 2002, p.323. [Emphasis mine]

[93] Aldo van Eyck's Orphanage Building was analyzed by Melis Gürbüzbalaban, Nihat Kalfazade and Ceyda Baran in Arch 609 studio (Advanced Themes in Architecture and Urban design I, conducted by Assoc. Prof. Dr. Emel Akozer, Part-time Instructor Fuat Etker).

for housing a million people), and Herman Hertzberger's The Central Beheer Office Building are the most important examples of "configurative discipline" approach. They are low-dense configurative buildings. About van Eyck's Amsterdam Orphanage Project, Eric Mumford remarks that "it was the first large building to demonstrate his idea of architecture as a 'configurative discipline'."[94]

In his orphanage project, by means of different combination of repetitive elements van Eyck created in-between spaces. On this subject, Alan Colquhoun states, "it is found dialectic between repeating external forms and interior spaces that move freely across their borders, creating -in Van Eyck's terminology- 'in-between spaces' and 'thresholds' by which private and public spaces are connected."[95]

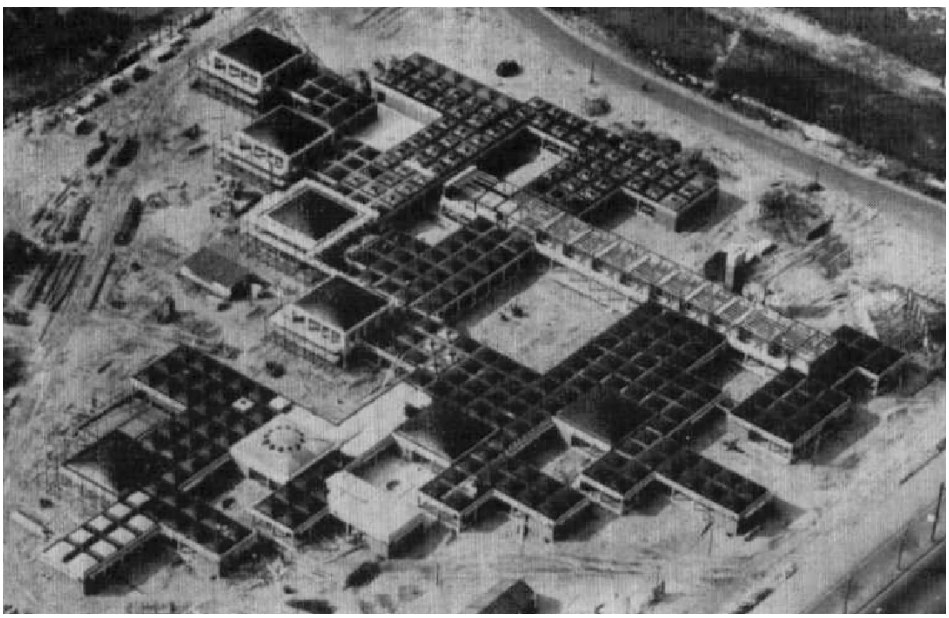


Figure 3.5 Amsterdam Orphanage Building. (Source: Architectural Design, May 1960 p.179.)

[94] Mumford, "The Emergence of Mat or Field Buildings," 2001, p.53.

[95] Colquhoun, *Modern Architecture*, 2002, p.220.

Orphanage Building is a horizontally weaved, low, continuous structure that is based on configuration of repetitive units (3.36x3.36 simple square). In this project, the architect constitutes "patterns of association" by means of simple orthogonal grid structure. This grid structure and repetition of units allow the architect easy articulation of form and great possible variability and flexibility for different needs in the future. William J. Curtis in his book, *Modern Architecture since 1900*, defines van Eyck's buildings as "a web of small pavilions looking into private courts, expressed as a repetitive but variable pattern."[96] About this building, Kisho Kurukava remarks,

> A representative work of van Eyck is the Amsterdam Orphanage in which fundamental units of space are combined to build the whole, while producing dramatic spaces, which make one unaware of the basic units. In some places the level of the floor varies, in others building units connect in larger spaces, and in the lighting provided, the units seem to melt into the whole.[97]

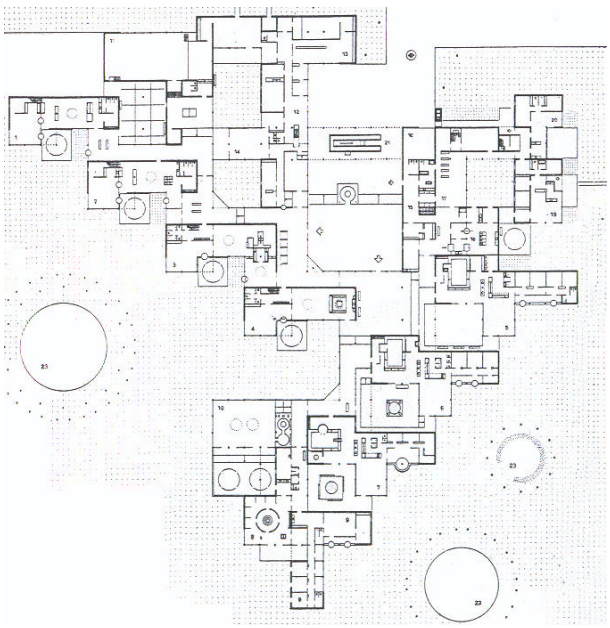


Figure 3.6 Aldo van Eyck's Amsterdam Orphanage Building, 1955, (Source: Charles Jencks, *Modern Movements in Architecture*, (Britain: Penguin Group, 1973) p.315.)

[96] William J.R. Curtis, *Modern Architecture since 1900*, (London: Phaidon Press, 1996): 549.

[97] Kisho Kurukava, 2002, "Rikyu Grey and the Art of Ambiguity," *Phylosophy of Symbiosis* [Internet, WWW].ADDRESS: http://www.kisho.co.jp/Books/book/chapter6.html [Accessed: 20 Dec 2004]

Orphanage Building has a labyrinthine circulation pattern that provides appropriate places for good communication and association for different age groups of children. Van Eyck considered "well-structured plans" and organizations to achieve "human association." Lefaivre remarks that,

> […] The distinguishing feature of Van Eyck's works is not either elevations or material image, but their well-structured plans. The plan, to him, was a work's most important dimension because it was a means of ensuring that people would meet, and thus build *human connections*. [98]

To sum up, "configurative discipline" is the spatial matrix, which provides flexible and variable configurations, and associates various human activities.

3.3 "Stem" and "Web" configuration by Josic, Candilis, Woods

> We propose that the city be considered as living organism and that its structure be open-ended and based on the possibilities of continuous change.[99]

Like Aldo Van Eyck, Candilis, Josic and Woods studied traditional urban environments. They searched for how to group a large number of spaces that have different functions and how to facilitate social interaction between people in these environments.[100] They tried to designate "basic principles of layout and organizational structure as to formal interpretation" for particular places and particular activities.[101] For them, social interaction and pedestrian life on the streets were important. They mainly thought that "the man in the street" was to be the most important consideration of their design. Woods states that "[t]he street may be revalidated if it is considered as a place as well as a way from one place to another."[102] Here, Woods emphasizes the importance of street not as a means of transportation but as a place for human communication.

---

[98] Lefaivre, "Rebel With a Cause: Dutch Architect Aldo van Eyck restored humanist values to modernist practice," 1999, p.82. [Emphasis mine]

[99] Smithson, ed., *Team 10 Meetings 1953-1984*, 1991, p.89.

[100] Ibid.

[101] Joedicke, *Candilis, Josic, Woods*, 1968, p. 9.

[102] Ibid.

Woods states that "[i]n the centuries before the advent of the architect-town-planner, habitat was the result of the interaction of cells (houses) and habitat. In the years since, it has become an arithmetical progression from cell (house) to mass-housing, and environment."[103] Street is the most important medium for the relation between cells (houses) and city. Then, street became the main design concern for their "stem" and "web" configuration where "associations" between people could be realized. Candilis, Josic and Woods chose the "stem" as a starting point for creating a new environment.

"Stem" is a system of linear organization that is very similar to the network of paths in traditional towns. It is in this sense that stem is the network of street that organizes human relation and "human association." It also systematizes the relation between the parts and the whole, the cell (house) and the city. According to Woods, it is a solution for "the production of houses in massive qualities."[104] Woods explains the importance of the linear organization or stem,

> We thought the simplest way would be to begin by trying to work out *a linear organization*, because it has more possibilities of flexibility and development and also because it can, in some way, help us to solve the intensity problem: trying to establish something that would remain more acceptable. We started with a line – as a way of organizing things- and began by saying what was on the line and the what the line was; a grouping of human activities which have to be discovered: it is an attempt to find out what will be *the relationship between things*. We like the fact that the line is open-ended and that you can do almost anything you want with it.[105]

Stem is an organizer of human activities. Woods states that "*...stems* include all the servants of homes [Referring to Louis Kahn's phrase, "Servant and Served"], all the *prolongements du logis*; commercial, cultural, educational and leisure activities, as well as roads, walkways and services."[106]

Stem configuration is also a response to CIAM's functional zoning plan. Candilis, Josic and Woods think that zoning plan is "static and therefore the least adapted to

[103] Shadrach Woods, "Stem," *Architectural Design* no: 30, (1960): 181-185.

[104] Shadrach Woods, "Stem," *Architectural Design* no: 30, (1960): 181.

[105] Smithson, ed., *Team 10 Primer*, 1968, p.89. [Emphasis mine]

[106] Shadrach Woods, "Stem," *Architectural Design* no: 30, (1960): 181.

change and growth of life."[107] However, stem is a linear organization that is "open-ended and based on the possibilities of continuous change."[108] In other words, it is one of the design tools that allows to bring together space and the fourth dimension, time dimension. Woods states that "[w]e can not think of planning in static terms, in three-dimensional space, when we live in a four-dimensional world."[109] Therefore, they think that their design must correspond to the changing conditions.

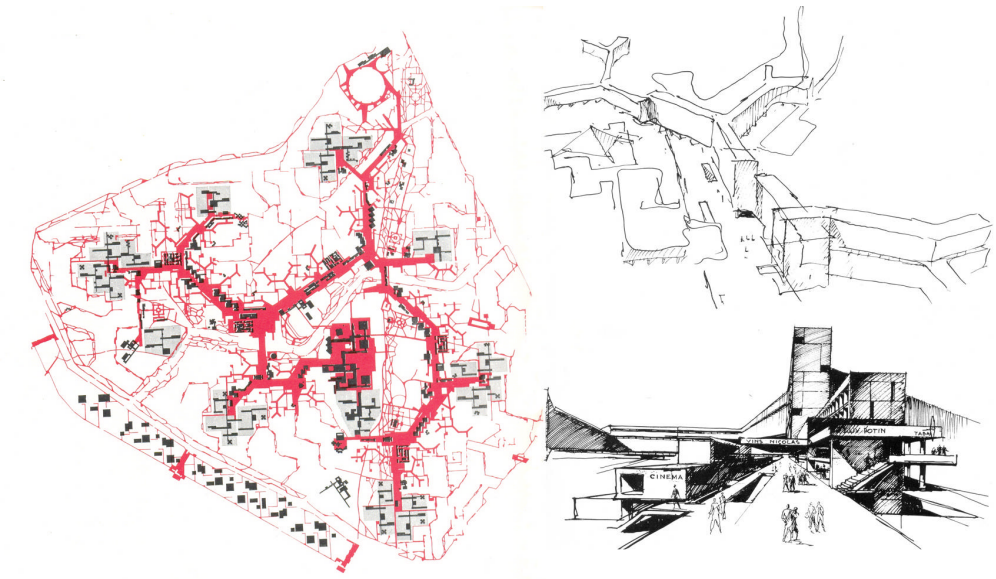


Figure 3.7 Toulouse- Le Mirail Housing project by Josic, Candilis, Woods, 1961 (Source: Jurgen Joedicke, *Candilis, Josic, Woods*, (Stuttgart, Karl Kramer Verlag, 1968): 189.)

Josic, Candilis and Woods used stem in many housing projects, such as Caen-Herouville Housing 1961, Asua Valley Competition 1962, and Toulouse- Le Mirail

[107] Shadrach Woods, "Urban Environment : The Search for System" in J. Donat, ed. *World Architecture*, 1 (London: Studio Vista,1964): 151. Quoted in Alexander Tzonis and Liane Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time in Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 123.

[108] Ibid.

[109] Ibid.

Housing project 1961 (Figure 3.7), and Fort Lamy urban renewal project 1962. These examples illustrate similar approach with Smithsons' Golden Lane housing project where they designed a pedestrian street network to organize human activities and human association. In these projects, the main idea is the linear association of the human activities and programmatic units.

In Candilis, Josic and Woods' Toulouse- Le Mirail housing project, stem is used as an organizer of human activities, such as education, commerce, work, and entertainment besides dwelling. Woods states that, "[t]he plan is based on the idea of linear association of activities which generates and serves the dwellings along it."[110]

"Web", that is more complicated than the linear organization, emerged from the stem idea. For Woods "the web is highly flexible, non-centric, open-ended, and can be plugged-into at any point and can itself plug-in to greater systems at any point."[111] It is an important device that goes beyond the limitations of a linear organization. Josic, Candilis and Woods used web strategy for several project, such as Frankfurt-Römerberg competition project (Figure 3.8, 3.9) and Berlin Free University (Figure 3.10).

Frankfurt Römerberg Center Proposal can be considered as a combination of Smithsons' pedestrian street deck and Aldo van Eyck's "labyrinthine clarity" in a well-organized way. The underlying principle was a simple grid of ordered pedestrian ways to which corresponded service system.[112] The main concern is to provide a coherent relationship between motor vehicle network and the pedestrian circulation in the city center of Frankfurt. The establishment of the relationship, the separation and conjunction of circulation systems are mainly considered.

---

[110] Shadrach Woods, "Stem," in Alison Smithson, ed. "Team 10 at Royaumond, 1962," *Architectural Design* no: 45, (Nov. 1975): 684.

[111] Shadrach Woods, "Web," *Le Carrer Bleu* 3 (1962). Quoted in Mark Wigley, "Network Fever," *Grey Room*, no.04, Summer, 2001, p.120.

[112] Shadrach Woods, *The Man in the Street*, (Harmondsworth, 1975) 123-124. Quoted in George Baird, "Free University, Berlin," *AA Files* 40 (Winter 1999): 67.

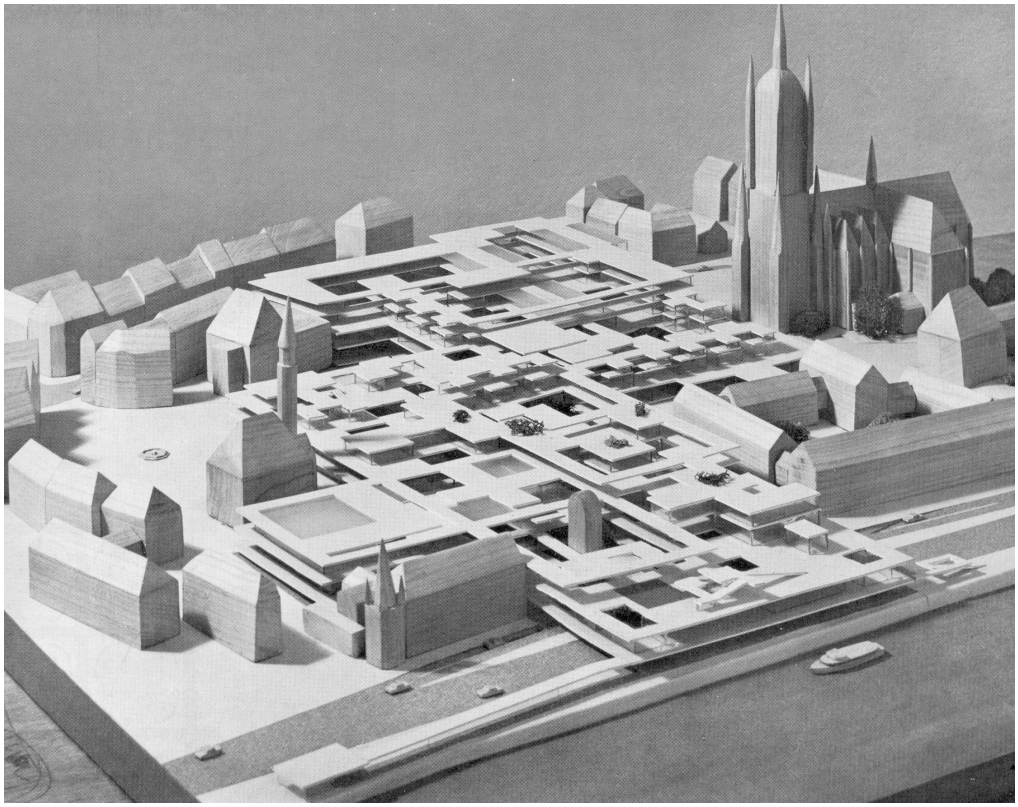


Figure 3.8 Frankfurt-Römerberg Competition Project. (Source: Jurgen Joedicke, Candilis, Josic, Woods, Stuttgart, Karl Kramer Verlag, 1968, p. 205)

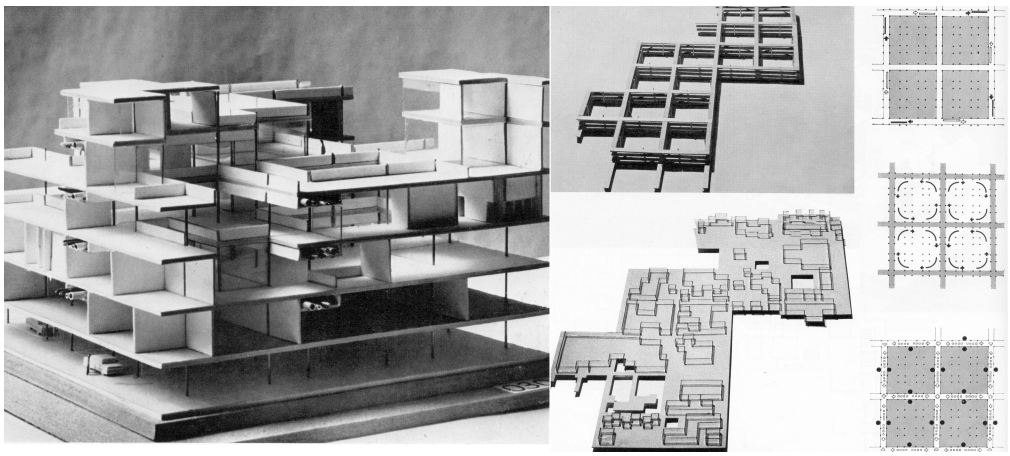


Figure 3.9 Candilis. Josic and Woods used "web" in Frankfurt center competition (Source: ibid., 206, 115)

Josic, Candilis and Woods' aim was to create a *multi-layered urban structure*. They used web configuration, a kind of circulation matrix, to articulate public and private domain.[113] It is an organization that includes "a multi-level grid of pedestrian ways, linking and serving the various activities with the private dwellings on the upper levels"[114] (Figure 3.9).

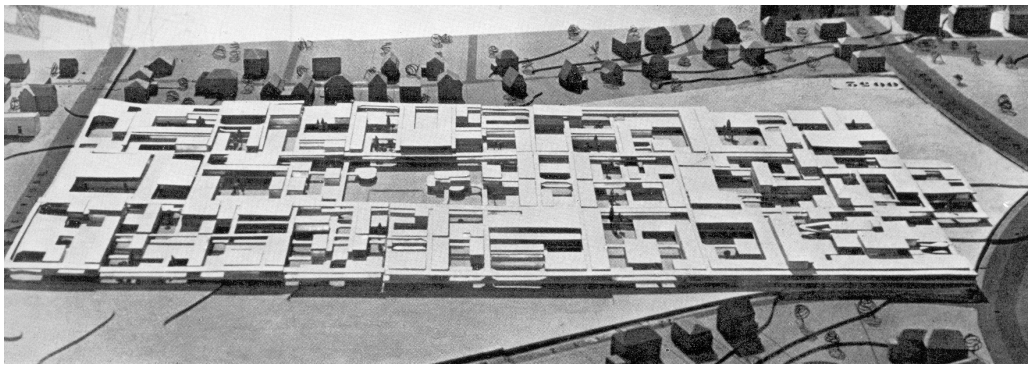


Figure 3.10 Berlin Free University Competition Project. (Source: Ibid., 211)

Frankfurt Römerberg Center Proposal would be a forerunner of their well known project, namely Berlin Free University project[115]. Josic, Candilis, Woods applied Smithsons' "dualistic planning strategy," which united pedestrian circulation network and communication system. They considered that communication and "association" should be the most important concern for the university complex, which consisted of different disciplines (Figure 3.11). Architects proposed a complex spatial organization for a modern university; they designed a network of interrelationship and opportunities for communication and "human association." Architects state,

[113] Joedicke, *Candilis, Josic, Woods*, 1968, p. 200.

[114] Ibid.

[115] Candilis, Josic and Woods' Berlin Free University project was analyzed in Arch 610 studio (Advanced Themes in Architecture and Urban design II) conducted by Assoc. Prof. Dr. Emel Akozer, Part-time Instructor Fuat Etker and Sinem Çınar in Spring 2003.

> Its principle function is to encourage exchange between people in different disciplines with a view to enlarging the field of human knowledge […] We tried to imagine a synthesis where all the faculties would be *associated* rather than *dissociated* and where the psychological barriers which separate one from the other would not be reinforced by physical barriers such as entrance doors and building walls and the physical identity of the parts at the expense of the whole.[116]

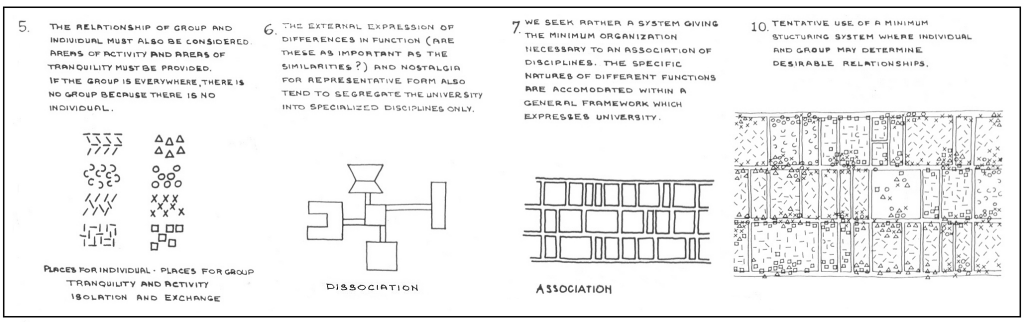


Figure 3.11 Conceptual diagrams of Berlin Free University Project. (Source: Jurgen Joedicke, Candilis, Josic, Woods, Stuttgart, Karl Kramer Verlag, 1968, p. 208)

Similar to the Frankfurt Center Proposal, the main concern is the web of the pedestrian circulation pattern. The web that is composed of pedestrian streets, ramps, staircases, large corridors, provides easy interconnection among different departments and auditorium, exhibition spaces, lounges, libraries, common lecture halls, cafes, courtyards etc. It is in a sense that web is the *network of association* that organizes the whole complex compositional order. Architects explain the web as an organization of physical environment that provides the maximum possibilities for contact and interchange.[117] It comprises the main rules of the whole structure as an infrastructural organization, and provides legibility and comprehensibility of the whole organization. Manfred Shiedhelm, one of the architects of Berlin Free University Project, explains their organization,

[116] Candilis, Josic, Woods, "Project for the Free University of Berlin," *Architectural Design* 34 (1964): 380. [Emphasis mine]

[117] Architects' Statement, "Competition Project, 1963-4," in Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 25.

> […] a three dimensional, grid-like flow pattern along which all kinds of activities could grow and be substituted by new activities if needed. Once we had found this web-like scheme of organization, the adoption of programmes became an easy task.[118]

"Stem" and "web" design strategies are the results of the search for the appropriate formal expression of human association. They are architectural spatial organizations that are shaped by relating various elements of program and appropriate places for human activities.

[118] Manfred Schiedhelm, "The Berlin Free University Experience," in Pamela Jonston, ed., *Architectural Association:Examplary Projects 3* (London: Architectural Association, 1999): 97.

CHAPTER 4

ANALYSIS OF GOLDEN LANE PROJECT BY SMITHSONS

In the previous chapter, design strategies of Team 10 members were introduced. These strategies allow not only to organize patterns of association but also to control the design process. In this chapter, Golden Lane housing project by Alison and Peter Smithson will be analyzed and discussed. In this project, Smithsons employed pedestrian street network in a way to organize not only human association but also the different layers of the program. Therefore, it might be said that this project is a forerunner of the later projects of Team 10 members.

Alexander Tzonis and Liane Lefaivre emphasize the conceptual shift that occurred in architecture and city planning in 1950s and 60s. They state that for Team 10 members, architecture should incorporate "new design developments based on space/time and movement."[119] Team 10 members attempted to understand features of the contemporary city and its relation with complex human life. Therefore, before explaining the method of analysis for the Golden Lane housing project, it will be better to mention how Team 10 members consider the contemporary city and society.

4.1 Team 10's Thoughts on the Contemporary City and Society

> [… Participatory architecture] calls into play as many variables as possible so that the result is multiple, open to change, rich in meanings that are accessible to everyone.[120]

---

[119] Alexander Tzonis and Liane Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time in Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 120.

[120] "Conversation with Giancarlo De Carlo: Milan, July 1990," in Zucchi p.168. Quoted in Noah Chasin, *Ethics and Aesthetics: New Brutalism, Team 10, and Architectural Change in the 1950s*, a dissertation, 2002, p.156.

Team 10 expressed the fact that the contemporary city was more complicated than the Functional City of CIAM. They stated that functional zoning plan was not adequate to respond to the changing needs of the contemporary society.[121] In explaining Team 10 members' criticism of functional zoning plan, Tzonis and Lefaivre point out :

> Architecture could not result from a zoning plan, which did not associate functions but only laid them out. Nor could it be made from a composition of solids and voids; no matter how dynamically these were shaped, they were still static and therefore the least adapted to the change and growth of life.[122]

Alison Smithson thinks that the mobile character of the contemporary society is to be the most important consideration of modern architecture and city planning. She remarks that:

> *Mobility* has become the characteristic of our period. Social and physical mobility, the feeling of a certain sort of freedom, is one of the things that keep our society together, and the symbol of this freedom is the individually owned motor car. *Mobility* is the key both socially and organizationally to town planning, for mobility is not only concerned with roads, but with *the whole concept of mobile, fragmented community*.[123]

Team 10 members aimed to develop new design strategies and communications systems to correspond to the needs of the new mobile society.[124] As Tzonis and Lefaivre write, for instance, "Woods' defense against the zoning mentality was to use the "stem" as an alternative means of viewing function: an approach based not on space alone, but human mobility in space."[125] Woods emphasizes different connotations of the term "mobility" for architects,

> Today we are concerned more and more, in face of a profound transformation in economy and in ethics, with what we call mobility so as not to use a more precise term. For architects, mobility has several connotations: in terms of movement it

[121] Smithson, ed., *Team 10 Primer*, 1968, p.66.

[122] Alexander Tzonis and Liane Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time in Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 123.

[123] Smithson, ed., *Team 10 Primer*, 1968, p.51.

[124] Smithson, ed., *Team 10 Primer*, 1968, p.66.

[125] Tzonis and Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time," 1999, p.123.

> signifies the shift from 2 miles per hour to 60, 100 or 500 miles per hour. In terms of time it means the appreciation of a fourth dimension, i.e. change on a short time cycle. In terms of economy, it means rapid mass-distribution, consonant with the potentialities of mass-production and mass-consumption.[126]

Considering mobility in terms of movement, there are *different speeds of movement* in the city that are especially related with pedestrian and automobile. Relation between low speed and high speed movement influences the shape and structure of the city.

Mobility is also related to *time*. Time dimension includes growth and change of space according to the future needs of inhabitants. In other words, architectural design must correspond to the future programmatic changes and needs. It means that it should be flexible. Woods insisted that time is one of the most important dimensions for space organization:

> We cannot think of planning in *static terms*, in three-dimensional space, when we live in four-dimensional world. The realization, for instance, that the scene of action of reality is not a three-dimensional Euclidean space but rather a four-dimensional world, in which *space and time linked* together indissolubly, sets our civilization apart from any others.[127]

In explaining Team 10's emphasis on "mobility" and "flexibility," Tzonis and Lefaivre state, "mobility and flexibility both [are] environmental means of enhancing and sustaining social interaction and maximization of choice."[128] As stated by Tzonis and Lefaivre, Team 10 redefines city as an organization of association that includes "new design developments based on space/time and movement and the associated concepts of mobility, flexibility and process."[129] Jean-Louis Violeau in his essay, "A Critique of Architecture: The Bitter Victory of the Situationist International," states,

> In search of a higher form of human relations, they [Alison and Peter Smithson] modeled an environment capable of suggesting this merging of architectural forms and life styles by exploring areas of a new imagination, where variability, movement, flexibility, and life in modern metropolises intersect.[130]

---

[126] Shadrach Woods, "Stem," *Architectural Design* no: 30, (1960): 181.

[127] Tzonis and Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time," 1999, p.119.

[128] Ibid.

[129] Tzonis and Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time," 1999, p.120.

Therefore, Team 10 approaches contemporary society as mobile and fragmented. It is in that sense that architects and city planners should consider and design by these concepts: space/time, movement, mobility and flexibility.

Alison and Peter Smithson emphasized that architects and city planners could respond to the needs of the mobile character of the society and problems in the built environment by means of "a new kind of aesthetic" or "a new idea of space that could attempt to respond to the dynamic features of the post war period."[131] The new kind of aesthetic is an "open-aesthetic" that is not fixed, immobile or static. Its form is not closed; instead it is capable of change. It is an aesthetic based on the idea of mobility and flexibility to enhance "human association" and interaction. The concepts of mobility, flexibility, growth and change play a central role on their attempt to "liberate architecture and city planning from the realm of functionalist design tendency after the Second World War."[132]

4.2 Framework of Analysis

Team 10 members do not regard the city as a static entity or a fixed structure. On the contrary, they consider it *as a process*, as a matrix of relations; it is a space of non-linear interactions or associations. City is understood as a "four-dimensional world" in which "space and time linked together indissolubly."[133] Relation between space and time requires reconsidering concepts of *mobility, flexibility, growth and change*. These are the concepts by which Team 10 understands and explains the city. Team 10 members tried to develop new design strategies that respond to mobility, flexibility, growth and change. Woods points out that

---

[130] Jean-Louis Violeau, "A Critique of Architecture: The Bitter Victory of the Situationist International" in *Anxious Modernisms* eds. by Sarah Williams Goldhagen and Rejean Legaul, (Cambridge, The MIT Press, 2000): 246.

[131] Smithson, ed., *Team 10 Primer*, 1968, p.49.

[132] Tzonis and Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time," 1999, p.121.

[133] Ibid., 119.

> We were trying to find a structure that you could begin to build and it would be capable of adapting itself to new conditions until it was built […] and perhaps, ideally, in the future, be always capable of readapting.[134]

It should be noted that despite their insistence on a mobile and flexible environment, Team 10 members emphasize the necessity for a *comprehensible and coherent structure* in architecture and urban planning. For Alison Smithson "[t]he aim of urbanism is comprehensibility, i.e. clarity of organization. The community is by definition a comprehensible thing.[135]

Team 10 considers "building as a city, city as a building." Designing a city or a building as an association of layers (a layered-up city or building) is considered as a solution for the organization of a comprehensible framework. Heuvel states that, Smithsons consider the contemporary city as "a many layered field, a heterogeneous, non-continuous space defined by non-linear interactions [associations]."[136] They called it: "a *layered-up city* with servicing facilities and circulation routes entirely below ground permanently locked into the systems above."[137]

Their aim is to achieve a multi-layered urban and architectural solution. These layers do not prevent the growth of other layers, yet they are connected to each other. There are heterogeneous, non-linear interactions between the layers. Hence, "association" of these layers is the most important consideration for their designs. Each layer has interactions or interchanges with others and each layer has its own trajectory, which allows for independent growth and change in time.

The layers that make up the city/building are mainly

- permanent layers or in Smithsons' terms, "*background permanency*"

  consisting of permanent circulation both pedestrian and vehicular (lines) and permanent fix elements (points)

[134] Smithson, ed., *Team Meetings*, 1991, p.89.

[135] Smithson, ed., *Team 10 Primer*, 1968, p.48.

[136] Dirk van den Heuvel, "The diagrams of Team 10," 2000, p. 42.

- temporary or transient layers

  composed of spaces that house the various functions (such as residences, shops, cafes, restaurants etc.)

They are in fact the programmatic layers; the layers of activities one above other, services, parking and apartments, shops etc.[138] Permanent background together with temporary or transient elements (flexible part) makes the whole structure. The permanent layer is the infrastructure or "backbone" structure, which defines the principles of growth and change. Infrastructure is the most important part of the complex that provides comprehensibility in the changing, mobile environment. The permanent layer, the skeleton of the city, is approached as a "long term structure," and the temporary elements as "short term elements," related with people's changing needs.[139]

By means of infrastructure or "backbone" of the structure all fragments or layers are organized into a continuous single complex system. Within the whole complex each layer interacts with other layers but each layer has its own rules for growth and change. Infrastructure should organize coherence of the overall structure and human relations.

"[B]ackbone is composed of such facilities as the general network of utilities (water, sewage, power) and the circulation-transportation systems, is *the main strategic tool of the urban designer*."[140] Team 10 members considered the network of the circulation system as an infrastructural element to achieve "human association."

Analysis of Smithsons' Golden Lane project aims to reveal their ways of organizing association. The thesis makes the analysis of this project in order to understand the ways how the layers are organized and associated to each other.

---

[137] John Lewis, ed., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 80.

[138] Ibid.

[139] Tzonis and Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time," 1999, p.129.

4.3 Analysis of Golden Lane Project by Smithsons (1952)

Golden Lane housing development for a bombed site in London was an architectural competition opened in 1952 and won by Chamberlin Powell and Bon. Powell and Bon's competition project was "a fairly routine exercise in Mainstream Modernism, with the usual mixture of high and low blocks, rather elegantly style in a formalistic manner, but the Smithsons and some of the other younger entrants again revealed a much more radical approach."[141]

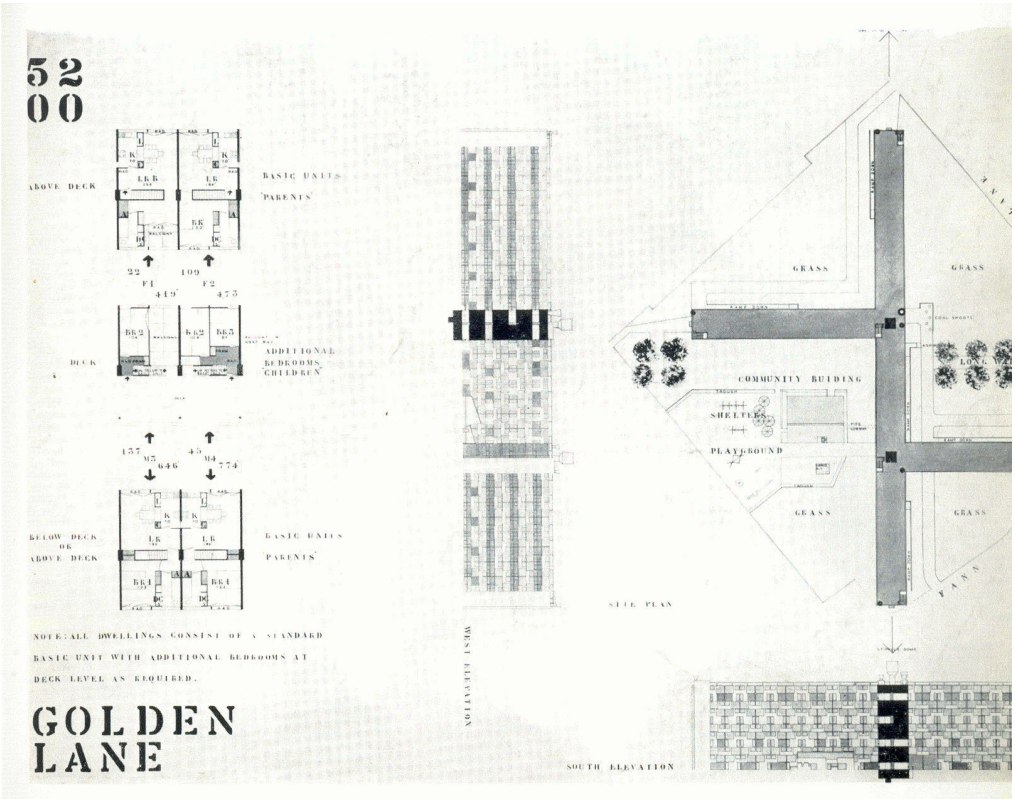


Figure 4.1 Smithsons' Golden Lane Proposal for competition in 1952. (Source: Reyner Banham, The new Brutalism, Ethic or Aesthetic?, (New York: Reinhold Publishing, 1966): 51.)

---

[140] Smithson, ed., *Team 10 Primer*, 1968, p.9. [Emphasis mine]

[141] Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, (New York: Reinhold Publishing, 1966): 41.

This thesis dwells particularly on Smithsons' Golden Lane housing competition project for the following reasons. Firstly, the project is developed as a model of the contemporary city (Figure 4.1). In her book, *Modernism without Rhetoric*, Helena Webster points out that the ideas of "open city," "cluster," "growth and change" and "mobility" are materialized firstly in the Golden Lane housing project.[142] It is a "manifesto project" [143] against the Functional City of Athens Charter. Frampton states, "Golden Lane was clearly intended as a critique of the *Ville Radieuse* and of the zoning of the four functions of the city."[144]

Secondly, the project is also important because in Aix at CIAM 9 meeting, Smithsons presented their architectural approach in reference to Golden Lane Project. In this meeting, Smithsons argued that the Functional City of the Athens Charter could not accomplish "human association." Then, this manifesto project was presented as an example the main goal of which was to achieve human association.

Thirdly, this project reveals Smithsons' emphasis on everyday life in the city, relation between inhabitants and their environment, and human association.[145] Smithsons were influenced by the work of sociologists, Michael Young and Peter Willmott. Their research on kinship and community had an impact on Smithsons' architectural thought and works.[146]

Golden Lane Housing Competition was a great opportunity for Smithsons to search for spatial organizations that correspond to human relations, associations and communications. It can be considered that this project was a basis for Smithsons' other projects, such as Sheffield University project and Hauptstadt project for Berlin city center. Heuvel points out that:

---

[142] Webster, ed., *Modernism without Rhetoric; Essays on the work of Alison and Peter Smithson*, 1997, p. 53.

[143] John Lewis, ed., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 18.

[144] Frampton, *Modern Architecture: A Critical History*, 1980, p. 272.

[145] Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, (New York: Reinhold Publishing, 1966): 41.

[146] Michael Young and Peter Willmott, *Family and Kinship in East London*, (London: Routledge, 1957)

> Instead of aiming to achieve a totalizing programme, which lays down a supposedly ideal situation, what the Smithsons are interested in is to adequately accommodate possible programmes and their future changes. They are interested in creating an architectural space, which offers leeway for individual appropriation and for occupation by spontaneously emerging patterns of living.[147]

Because of its consideration of organic growth, Golden Lane Project became a model also for other architectural works, such as Constant's New Babylon project (Figure 4.2, 5.1).

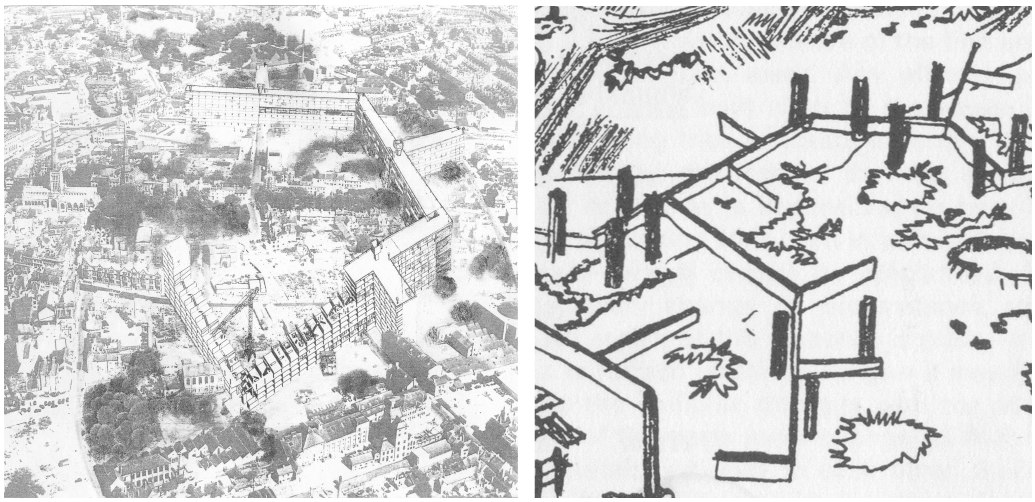


Figure 4.2 Branches connecting the dwelling units in Golden Lane Proposal. (Source: John Lewis, ed., *Urban Structuring- Studies of Alison and Peter Smithson*, 1967, p. 24, 27.)

In Golden Lane project, the network of pedestrian streets is a solution to Alison Smithson's search for "an ideal pattern of association." According to Hellen Webster, in this project Smithsons suggest that, "the streets and the housing blocks might multiply to form a network overlaid on the existing city. The Smithsons used a 'random' or 'scatter', aesthetic drawn from science, molecular geometry, and art brut to distribute housing blocks linked by pedestrian walkways as a new layer over the

[147] Dirk van den Heuvel, "The diagrams of Team 10," 2000, p. 42.

existing bomb-damaged, 'ruined' city."[148] It is an organization that brings together different human activities, such as dwelling and shopping in a unified whole by means of network of streets, which is the infrastructure of the whole complex.

4.3.1 Association of Layers in Golden Lane

> A town is by definition a specific pattern of association, a pattern unique for each people, in each location, at each time. To achieve this specific pattern it must develop from principles, which give the evolving organism consistency and unity.[149]

In Golden Lane project, the system of pedestrian and vehicular circulation and how this system is related with new housing blocks, public buildings and existing city fabric are considered. In other words, this is an articulation of public domains (i.e. streets) and private domains (i.e. housing units).

In this project, on top of the existing vehicular road system Smithsons proposed *three different programmatic layers* that make up the whole complex. Each layer has its own specific task and use: a layer of *continuous pedestrian street deck* or "pedestrian streets-in-the-air"; of *collective public buildings*; and of *housing units or cells*.[150] Smithsons explain their purpose:

> In order to keep ease of movement, we propose a multi-level city with residential streets-in-the-air. These are linked together in a multi-level continuous complex.[151]

*** Continuous Pedestrian "Street-in-the air"**

Smithsons proposed three levels of continuous pedestrian deck. The network of continuous pedestrian air deck, which is designed to combine all different programmatic layers in unity, is considered to be the most important element of the

---

[148] Webster, ed., *Modernism without Rhetoric; Essays on the work of Alison and Peter Smithson*, 1997, p. 32.

[149] John Lewis, eds., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 29.

[150] Dirk van den Heuvel, "The diagrams of Team 10," 2000, p. 43.

[151] John Lewis, eds., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 26.

complex to give an equal ease of access to all parts of the whole structure. According to Smithsons, the street network system constitutes "the basis of the community structure."[152] The network of pedestrian circulation, which is like tree branches implying "growth, organicity and movement,"[153] forms the *infrastructure* of the whole complex.

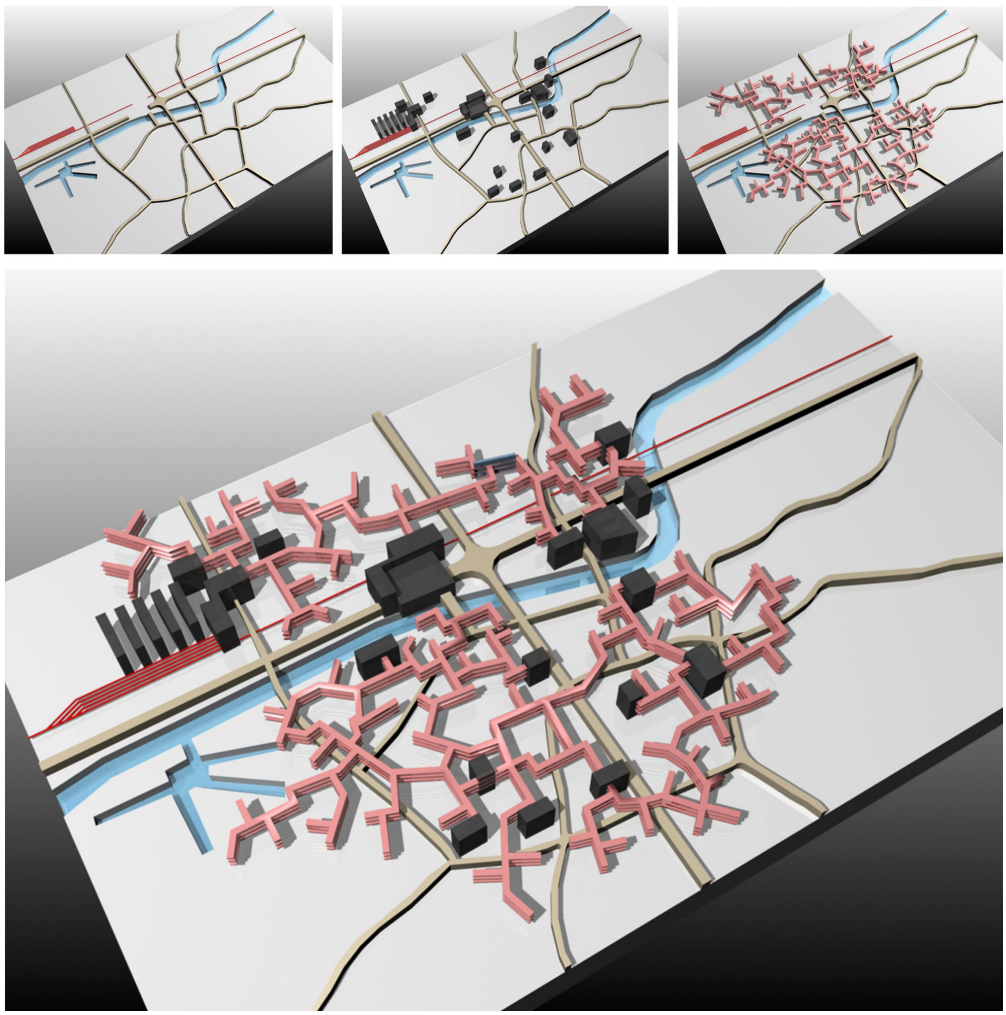


Figure 4.3 Combination of permanent and transient layers of the urban complex. From top left to top right: Existing street pattern (permanent layer); permanent public buildings; "streets-in-the-air" (permanent background) and house units defined by pedestrian circulation (transient layer). Melih Yüksel, 2004.

[152] John Lewis, eds., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 29.

[153] Diana I. Agrest, *Architecture From Without*, (Massachusetts: The M.I.T. Press, 1993): 45-48.

Smithsons called the continuous pedestrian air deck, which is above the ground and free from vehicular circulation, "Streets-in-the-air." "Streets-in-the-air" composes a network over the existing city in order to provide easy movement. Pedestrian street network is, as Smithsons call, the "permanent background" of the overall structure. For them, "permanent background" of the city is the most important means of structuring the ongoing urbanization (Figure 4.3).[154]

Smithsons planned each level of continuous pedestrian air deck so as to house 90 families or housing units. They thought that the group activity would be along the pedestrian decks and concentrated on the squares at the intersection of the pedestrian decks. Smithsons points out that "[t]hese crossings are triple height, contrasting with the single height decks, inviting one to linger and pass the time of day. There are stairs and lifts at these crossings and deck ends"[155] (Figure 4.4).

Golden Lane housing scheme is not based on a rigid system. It is an infrastructural organization the main constituent of which is a pedestrian street network. Network of pedestrian streets is the skeleton of the complex in the sense that it defines not only patterns of association but also principles of growth and in turn, prepares the ground for possible future changes. Then, the network of pedestrian circulation becomes the "permanent background" of the overall complex. It forms the organizational principles and defines how the whole complex will grow and change.

*** Housing Units or Cells**

Housing units are arranged on the one side of the pedestrian decks (Figure 4.4). The other side is left open to natural light so that natural light fills up all pedestrian deck. Housing units, which act as a super-structure, are *the flexible or transient parts* of the whole structure. They are organized along the pedestrian street network. Houses are places for individuals or individual families, and streets are meeting places or socializing places for community (Figure 4.4, 4.5). The house is the basic unit of the city. Alison Smithson states that "[t]he house, the shell which fits man's back, looks

[154] Dirk van den Heuvel, "The diagrams of Team 10," 2000, p. 43.

inward to family and outward to society and its organization should reflect this duality of orientation [...] The house is the first definable city element."[156]

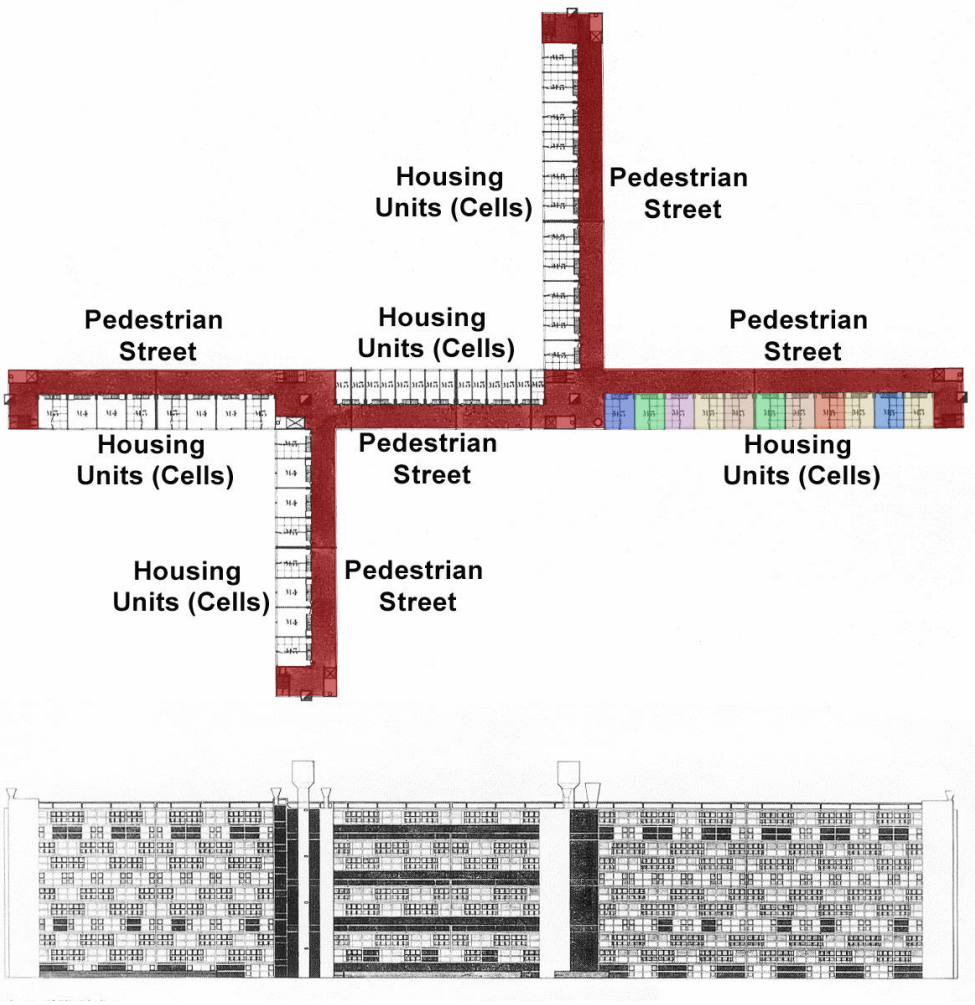


Figure 4.4 Relation between pedestrian-street and the dwelling units in Golden Lane Proposal. (Source: Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, (New York: Reinhold Publishing, 1966): 50.)

[155] Alison and Peter Smithson, *Ordinariness and Light*, p. 54.

In this housing project, Smithsons propose a flexible system in a sense that dwelling units could be accorded to user needs. For instance, all housing units have its own yard-garden on the pedestrian street level, and depending on the user's need, it can be changed into an additional bedroom. Yard-garden, which has visual relation with the street, is a semi-private part of a unit. It offers outdoor living to its users. According to the changing needs, housing units can be converted to "house-shops" and "house-workshops," which "will not interfere with the normal working of the plan."[157]

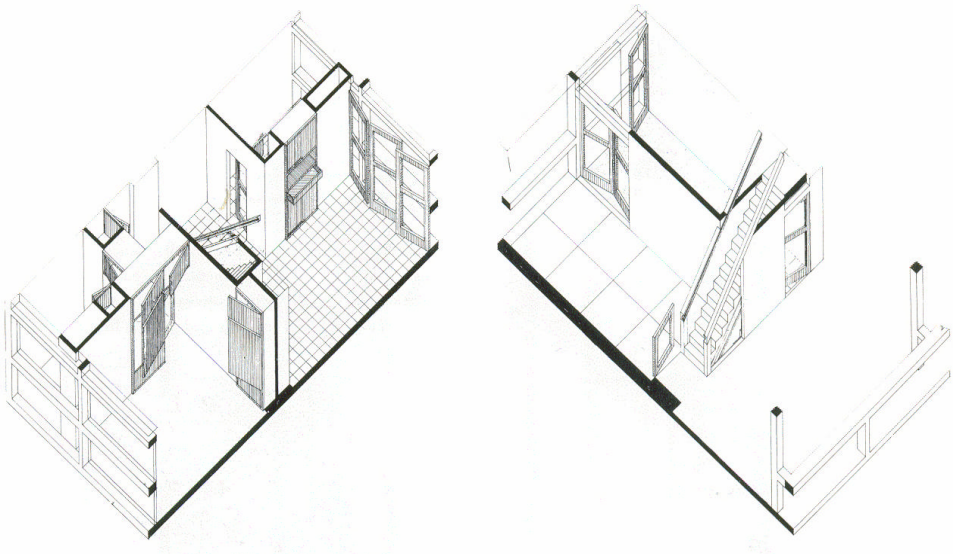


Figure 4.5 Axonometric of standard housing unit with yard-garden in Golden Lane Proposal. (Source: Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture, Alison and Peter Smithson*, (New York: The Monacelli Press, 2001): 95.)

*** Collective Public Buildings**

Along with the circulation network, which is the permanent "long term structure" of the city, there are public buildings, which may be regarded as the "long-term elements" of the city. Smithsons explains the long-term elements as follows:

---

[156] Alison and Peter Smithson, *Ordinariness and Light*, p. 44.

[157] Alison and Peter Smithson, *Ordinariness and Light*, p. 57.

> In the related cycles-of-change of community, certain historical buildings are often regarded as fixed in perpetually and are indeed fixed as long as they are socially felt to be important. Others like law courts or municipal buildings have almost unchanging functions, or-like power stations and heavy industrial plants-represent investments too massive to be altered frequently.[158]

Historical buildings, law courts and municipal buildings, power stations, some industrial buildings that have almost unchanging functions, natural elements (e.g. river) and railway route are the permanent elements of the city. These are the fixed, permanent and identification *points* of the city. However, it should be noted that, the pedestrian street network and vehicular road system together (as permanent *lines* of the city) are more crucial to the design of the whole complex. The transient elements of the city are parking garages, offices, department stores, "the shops, houses and similar small structures, which are added to, altered or completely rebuilt on a short term cycle of change."[159] Smithsons remark that "[t]he horizontal street mesh would slot into the vertical circulation of other building in an attempt to fuse many different kinds of multi-level buildings."[160]

4.3.2 Street Network and Human Association

> It featured above-grade pedestrian "street decks" and flexible connections to the ground and to places of work. The motivating idea was the creation of a vital sense of communal life.[161]

Pedestrian street network is the network of "association" that organizes interaction between transient elements and fixed structures. It is the basic or constant structure that becomes the main constituent of the multi-layered organization. Whilst pedestrian network organizes interaction between the components of the complex, it also arranges networks of social relationships and activities that take place on the street (Figure 4.6, 4.7). The circulation network is crucial to the organization of human association at different levels (Figure 4.6).

---

[158] Smithson, eds., *Team 10 Primer*, 1968, p.71.

[159] Ibid.

[160] John Lewis, eds., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 27.

Smithsons claim that a horizontally weaved structure enables more communication and association than high-rise separate blocks. "Streets-in-the-air," which spread horizontally over the city, is considered to be the main part of the horizontal organization. It acts as the permanent layer or infrastructure of whole complex, which is designed to supply easy movement for the pedestrians over the motor vehicle circulation. It becomes an appropriate place for good communication and human association. Smithsons states that:

> Real social groups cut across geographical barriers, and the principal aid to social cohesion is looseness of grouping and ease of communication rather than the isolation of arbitrary sections of the total community with impossibly difficult communication. [162]

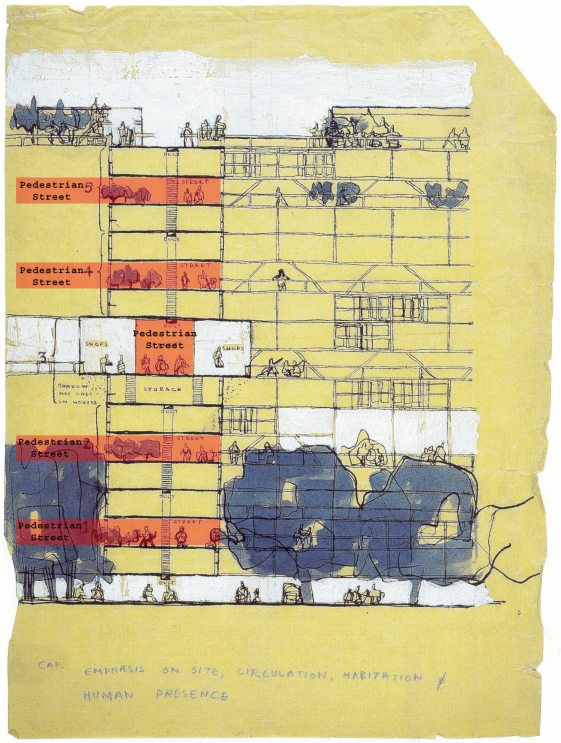


Figure 4.6 Section with partial elevation from Golden Lane project. (Source: Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture, Alison and Peter Smithson*, (New York: The Monacelli Press, 2001): 91.

[161] Ockman, *Architecture Culture 1943-1968, a Documentary Anthology*, 1993, p.183.

Life on the street is the main consideration in the Golden Lane project. For Smithsons "[t]he street is not only a means of access but also an arena for social expression. In these streets is found a simple relationship between house and street."[163] They develop a "dualistic planning strategy," which articulates streets or decks as places for not only circulation but also communication between people. Then, street is approached as an element of organization, which provides the relationship between public and private domains, and intensifies human association. Reyner Banham remarks that:

> The deck was intended to function socially and psychologically in the manner of the street, which is the main public forum of communication, the traditional playground for children, and the only public space available for mass meetings and large-scale sociability.[164]

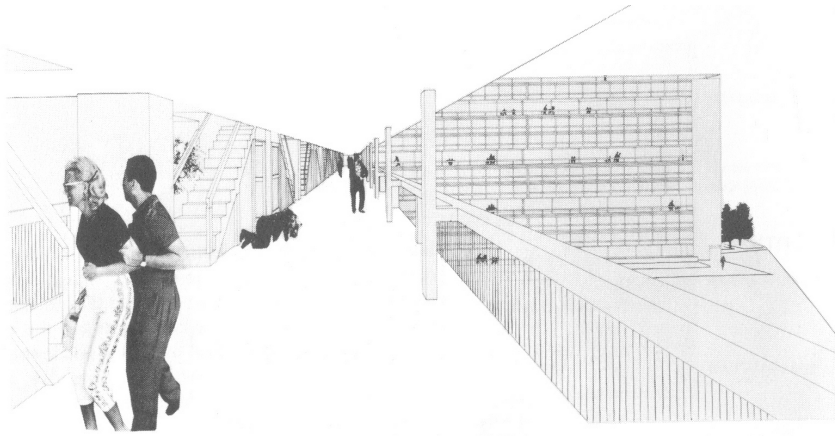


Figure 4.7 Relation between "Streets-in-the-air" and entrance of house units. (Source: Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture, Alison and Peter Smithson*, (New York: The Monacelli Press, 2001): 87.)

For Frampton, "[human] association applies mainly to Golden Lane […] It applies particularly to the "house/street" relationship."[165] In the Golden Lane project, "high

---

[162] Alison and Peter Smithson, *Ordinariness and Light*, 1970, p. 43.

[163] Ghuihua Judy Chung, ed., *The Charged Void: Urbanism, Alison and Peter Smithson*, (New York: The Monacelli Press, 2005): 24.

[164] Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, (New York: Reinhold Publishing, 1966): 42.

activity zones" are the pedestrian streets and the squares that are at the intersection of these streets, and "quiet zones" are the cells or housing units (Figure 4.8). The relationship between community and individual and its spatial organization are considered.

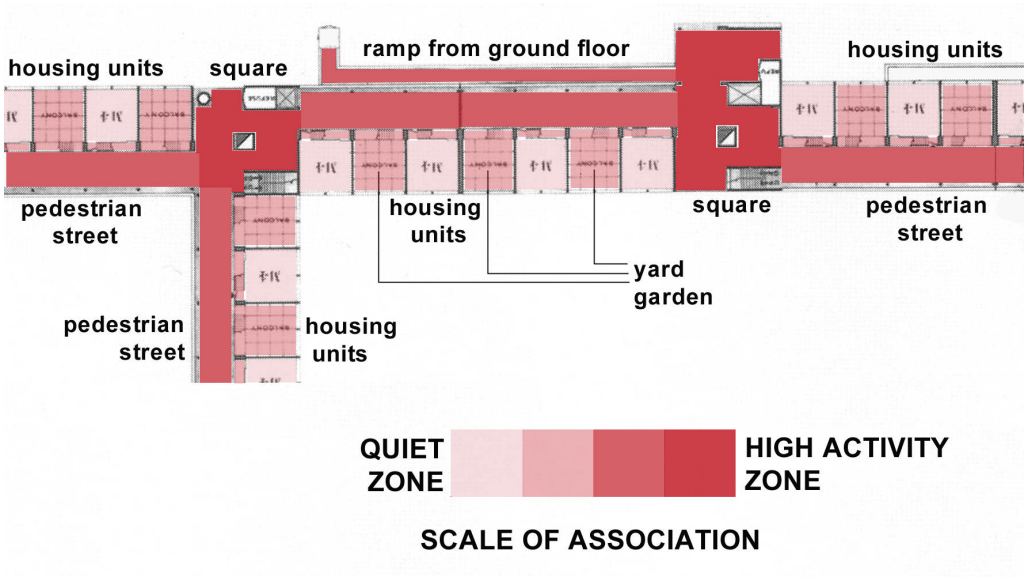


Figure 4.8 Scale of association in Golden Lane housing project. Melih Yüksel, 2005.

Pedestrian "street decks," used to create a fundamental sense of communal life and flexible connections to the each level give the project an impressive character. Smithsons argue that continuity of movement systems (of pedestrian and vehicular) would provide a well-established city structure. It is the movement systems that form the network of association and in turn, organize the urban complex.

4.3.3 Reflections on the Golden Lane Housing Project

Smithsons' continuous pedestrian street deck in the Golden Lane proposal is a basis for their following projects, such as Sheffield University (1953) project and

[165] Kenneth Frampton, "Golden Lane Housing Project," 5 March 2005, personal email (5 March 2005).

Hauptstadt project for Berlin city center (1958). In Sheffield University project, Smithsons inserted their urbanistic thought that was evolved by means of their Golden Lane proposal into their architectural work. For Sheffield University project, the network of pedestrian movement is an important element to create comprehensible "architectural organization of the building"[166] (Figure 4.9). Smithsons' aim is to provide easy and continuous circulation among all departments without any segregation. In this project, the old and new building complexes were combined into a unity by means of the pedestrian street network.

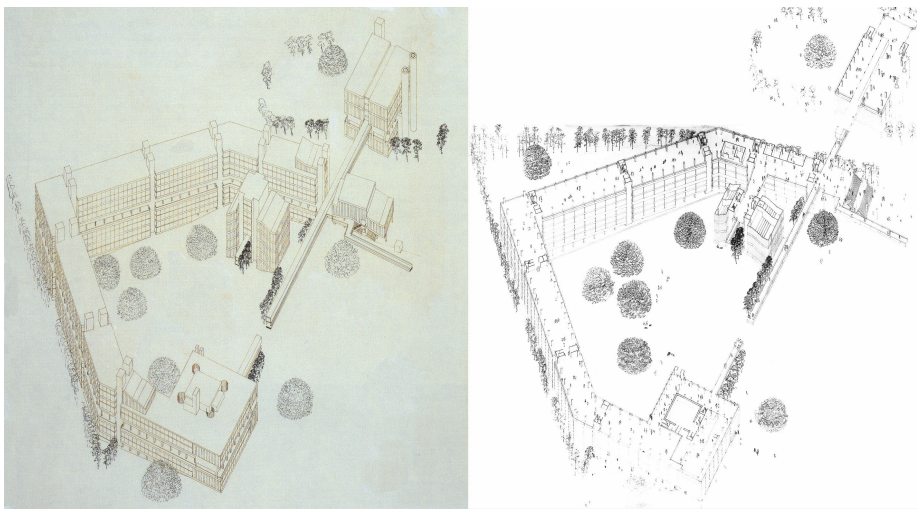


Figure 4.9 Sheffield University project by Smithsons (1953). (Source: Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture, Alison and Peter Smithson*, (New York: The Monacelli Press, 2001): 109, 111.

Continuous circulation pedestrian air deck provides places for human association, meeting places for students and academicians. Smithsons design the pedestrian circulation deck as a "high activity zone," which provides interconnection between different departments, and private places or working places for special usage of individuals as "quiet zones."

[166] John Lewis, eds., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 47.

All university activities are designed in one complex organization. This is a continuous "ring" in which all departments could be positioned in relation to each other. It responds to the demands of the faculty for flexibility and adaptability of the floor plans to accommodate unforeseen future changes.

Smithsons considered that the structure of the university should be capable of growth and change according to university's needs. Continuous pedestrian street deck supplies a horizontally expandable and flexible structure. Smithsons state,

> [t]he conception of high-level circulation and service in a continuous building complex made it possible to satisfy the university's desire to extend horizontally rather than vertically [...] Furthermore, the technological intention of much of the university seems to point to buildings of the maximum flexibility-so that today's laboratory can be tomorrow's testing room or group of studies [transient elements]. This flexibility is most easily achieved in a simple, repetitive, continuous structure.[167]

In this project, Alison Smithson emphasizes "the concept of the fixed and the changing; the permanent contrasting with the temporary."[168] By means of light steel flexible construction, "the accommodation can be large or small, single or double volume, or any combination which may suit functional requirements at any given time in a department's life. Floors and panel walls can be stripped out as desired."[169]

Both in the Golden Lane housing project and Sheffield University project, the main idea is to arrange human activities in the building, organize and connect programmatic elements, achieve well-balanced relationship between "high activity zones" (public) and "quiet zones" (private), and consider future changes.

---

[167] Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture, Alison and Peter Smithson*, (New York: The Monacelli Press, 2001): 108.

[168] Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture, Alison and Peter Smithson*, (New York: The Monacelli Press, 2001): 110.

[169] Ibid.

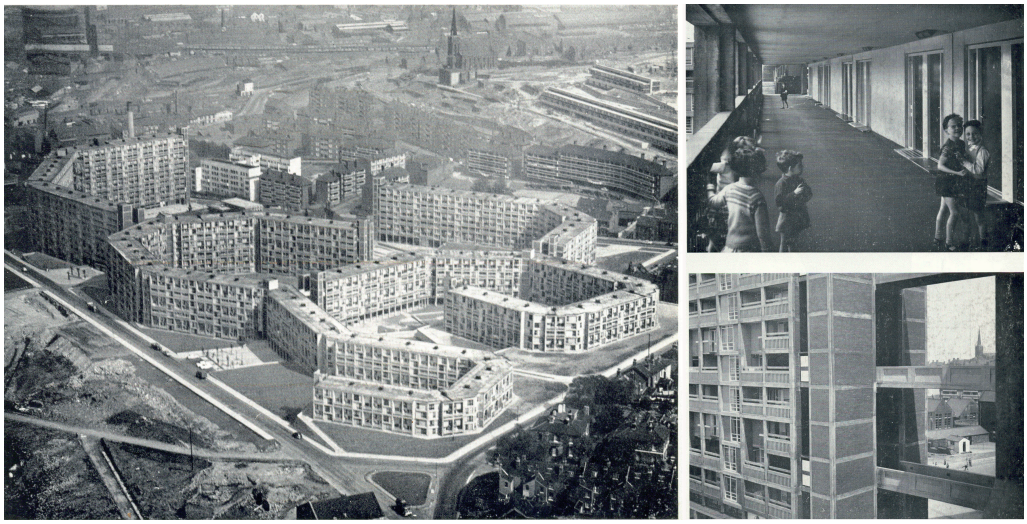


Figure 4.10 Park Hill housing development by Jack Lynn and Ivor Smith in 1961. (Source: Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, (New York: Reinhold Publishing, 1966): 183, 187.)

Smithsons' Golden Lane project had a great impact on several architectural works. For instance, Jack Lynn and Ivor Smith used a street deck in their Park Hill Housing development in Sheffield (1961). In this housing development, architects used twig-like structure or stem to organize housing units. It is a huge continuous complex building in which architects combine the units by means of continuous pedestrian street (Figure 4.10). The effect of Smithsons' Golden Lane Project on Park Hill Housing development is noticeable. At best, Park Hill Housing development is a horizontal infrastructural organization that promises an effective sociability, connectivity, and mobility; at worst, this is an out off control and endless urban development, the complex could "never be perceived as a whole."

4.4 Evaluation

In reference to Team 10 members' design strategies and their projects in general and Smithsons' Golden Lane housing project in particular, it is noticed that Team 10 members tried to find "ideal patterns of association." They believe in that identity of buildings is given by patterns of association and not by architectural form. Therefore, they tried to develop new formal structures and organizations by considering

individual/community relation and its *formal expression*. Spatial organization of association should take into account possible *future growth and change*.

4.4.1 "Permanent Background": Infrastructure

Actually, what Team 10 members propose are infrastructural organizations. Pedestrian street network, which forms patterns of association, and structures possible growth and change, is the main constituent of infrastructural organizations. By means of infrastructure or "backbone" structure, in Team 10 members' words, "comprehensibility, identity, and clear organization of association"[170] could be achieved.

Team 10 architects used the idea of "a reciprocal determination between the part and the whole, small and large, *house and city*"[171] in order to create a comprehensible spatial organization. For instance, Berlin Free University and Amsterdam Orphanage Building (Figure 4.11) were designed like small cities that consist of different programmatic elements combined by the pedestrian networks. Considering the part-whole relationship, Smithsons state "the identity of the whole should be latent in the components whilst the identity of the components should remain present in the whole."[172]

As it has already been pointed out, by means of infrastructure or "backbone" of the structure, all fragments or layers are organized into a perpetual complex system. In the whole complex, each layer interacts with each other but each layer has its own organizational rules. Infrastructure is to support or organize the coherence of the overall physical structure and human relations in the whole system.

[170] Smithson, eds., *Team 10 Primer*, 1968, p.48.

[171] Heuvel, "The diagrams of Team 10," 2000, pp. 40-52.

[172] Smithson, eds., *Team 10 Primer*, 1968, p.51.

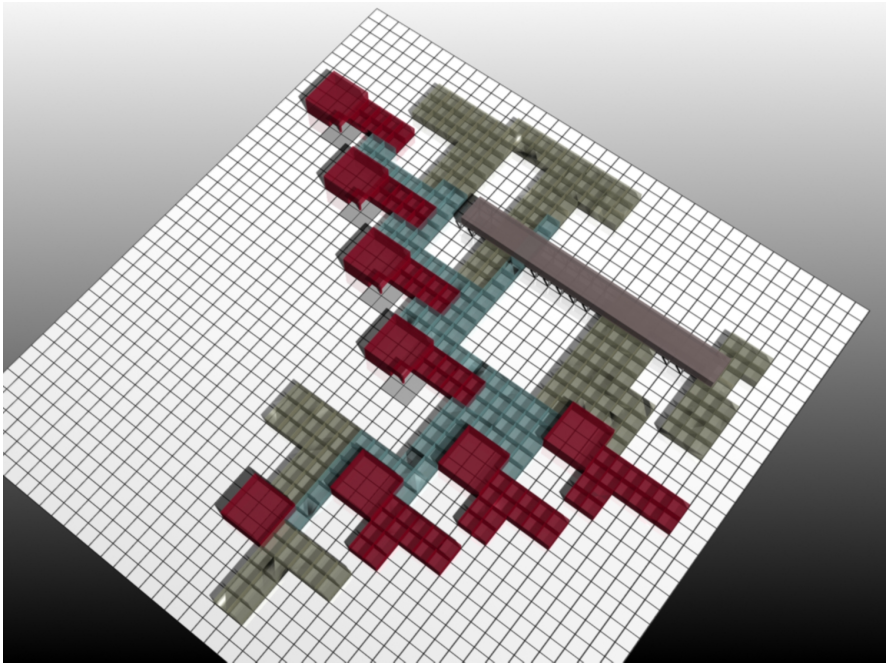


Figure 4.11 Analysis of van Eyck's Amsterdam Orphanage Building. Melih Yüksel, 2004.

Team 10 members analyzed the city street system in order to constitute a comprehensible structure or permanent background. In his evaluation of Berlin Free University, Schiedhelm explains the importance of the streets for the city,

> The street seen as a linear center around which the city could grow. The street is a void, which allows the flow of people, goods and facilities. The street is the only permanent element of the city. As long as this void was kept clear, the rest could be adapted to changing needs.[173]

Smithsons considered street system as the permanent background of the city and called as "a long term structure." Alison Smithson states,

> [T]he city needs fixes-identifying points which have a long cycle of change by means of which things changing on a shorter cycle can be valued and identified. With a few and clear things, the transient-housing, drug stores, advertising, sky signs, shops and at shortest cycle of all-are no longer a menace to sanity and sense of structure […] At the present time the road system seems an obviously fixed thing.[174]

[173] Manfred Schiedhelm, "The Berlin Free University Experience," 1999, p.97.

Team 10 members approached the building as a city. In other words, they tried to constitute an analogy between the city street system and the building circulation system. Therefore, similar to street pattern in the city, they proposed pedestrian circulation networks for the building complexes (Figure 4.12). In their projects, the meaning of the street in the city was redefined, such as in the cases of Smithsons' Golden Lane, and Candilis, Josic, Woods' Berlin Free University project or their Toulouse-Le Mirail Housing project (Figure 3.7). In Golden Lane housing project, a network of "streets-in-the-air" is introduced as a new urban element, which is deemed as a mechanism for social interaction. It is approached as the main strategic design tool.

Smithsons' usage of pedestrian street network as to achieve association in Golden Lane housing project had significant influence on the other Team 10 members' works. For instance, Golden Lane's twig-like structure inspired the "stem" idea of Candilis, Josic and Woods. Bakema and Van den Broek used pedestrian street deck as an organizer of the whole complex in their Tel Aviv-YAFO Central Area Project (Figure 4.13).

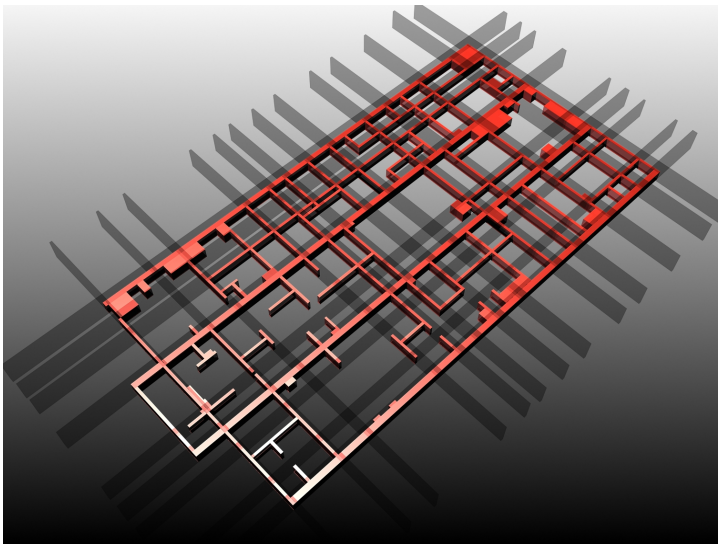


Figure 4.12 Street network system of Berlin Free University. Melih Yüksel, 2004.

[174] Smithson, ed., *Team 10 Primer*, 1968, p.68.

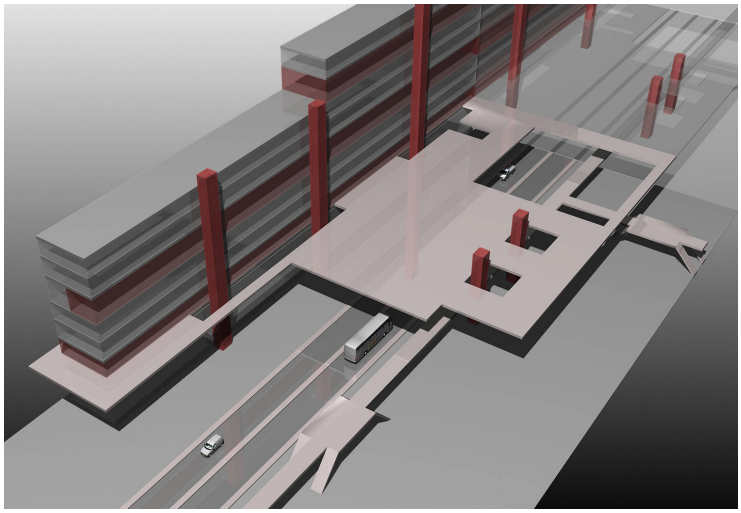


Figure 4.13 Pedestrian Street Deck in Tel Aviv-YAFO Central Area Project. Melih Yüksel, 2004.

In van Eyck's Amsterdam Orphanage project, labyrinthine circulation pattern provides a suitable environment for association between different age groups of children (Figure 4.13), and in Candilis, Josic and Woods' Berlin Free University project network of circulation provides appropriate places for association between people from different departments (Figure 3.11). In Berlin Free University project, pedestrian web forms the "permanent background" of the whole complex. In other words it is the permanent element that organizes association of different departments. Rooms, lecture halls, lounges, exhibition spaces are the flexible or transient part of the whole structure. Pedestrian web combines all transient parts of the whole complex in a unity.

It can be noticed that Team 10 members proposed horizontally weaved structures since they believed that horizontal organizations encourage association (Figure 4.14). For example, Berlin Free University and Amsterdam Orphanage Building were conceived as horizontally articulated pedestrian-streets to achieve well-balanced "association." Horizontality or horizontal organization, what Josic, Candilis and Woods call as "groundscraper," increases the possibilities of communication. The network of pedestrian street in the horizontal organization supports well-organized reciprocal relationships between "areas of activity" and "areas of tranquility," high activity zones and quiet zones,

general and special, interaction and segregation. This reciprocal relationship is related with the "scale of association" in the building complex.

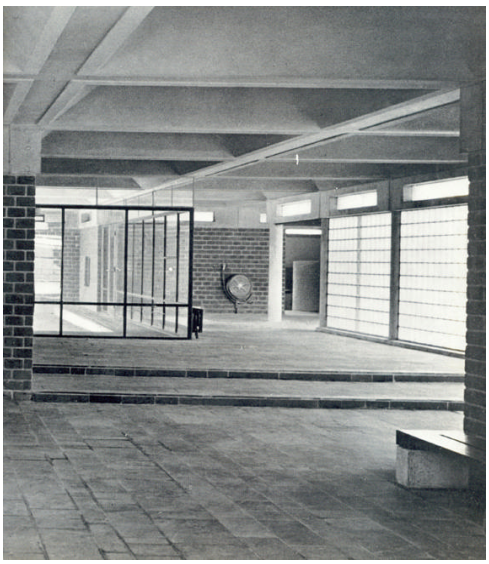


Figure 4.14 Van Eyck's Amsterdam Orphanage project, labyrinthine circulation pattern. (Source: Reyner Banham, *The new Brutalism, Ethic or Aesthetic?*, (New York: Reinhold Publishing, 1966): 159.)

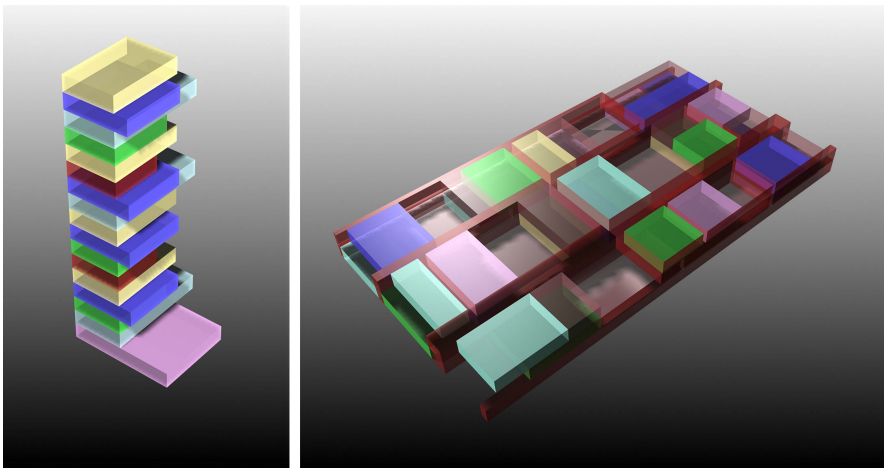


Figure 4.15 Possibilities of communication in vertical & horizontal organizations. from left to right: vertical organization (isolation), horizontal organization (association). Red areas indicate communication areas. Yüksel, 2005.

Team 10 members considered pedestrian streets as elements of infrastructure or permanent parts of the whole structure. Infrastructure is a clear and indestructible basic structure that allow for a maximum freedom for growth and change.[175] "Permanent background" or infrastructure promises flexibility.

4.4.2 Flexibility

> […] We have got to evolve a completely new sort of aesthetic to begin with-a new sort of discipline-which can respond to growth and change.[176] The aesthetic of the buildings in an urban environment should reflect the appropriate cycle of change."[177]

Team 10 members were interested in "the constant and rapid evolution" of society due to technological developments.[178] The changing modes of production, distribution and consumption require a flexible environment rather than a static and fixed one. A flexible environment does not mean chaos; however it has to maintain coherence at all stages of change and growth. Team 10 members searched for the ways of creating flexible and changeable environments by complex compositional organizations. In their book *Ordinariness and Light*, Smithsons state that:

> What we are after is something more complex, and less geometric. We are more concerned with 'flow' than with 'measure'. We have to create architecture and town planning which, through built form, can make meaningful the change, the growth, the flow, the vitality of the community.[179]

Here, Smithsons underline "flow" rather than "measure" in order to indicate the significance of infrastructural organizations, which evolve in time and remain coherent, instead of ideal geometry. In doing so, they argue for the fact that a city or a building is not a static and absolute entity; they are dynamic structures that can change and grow in time. Moreover, with the emphasis on "flow," Smithsons also imply the

---

[175] John Lewis, eds., *Urban Structuring: Studies of Alison and Peter Smithson*, 1967, p. 31.

[176] Ibid., 49.

[177] Ibid., 71.

[178] Ibid.

[179] Alison and Peter Smithson, *Ordinariness and Light*, 1970, p. 130.

significance of movement in design. Considering the possibility of change in the programmatic requirements of a building, they tried to develop a system of organization that is open to growth and change. Candilis, Josic and Woods in their Berlin Free University, considered the stages of university's development or the possible extensions according to the future needs of the university (Figure 4.15).

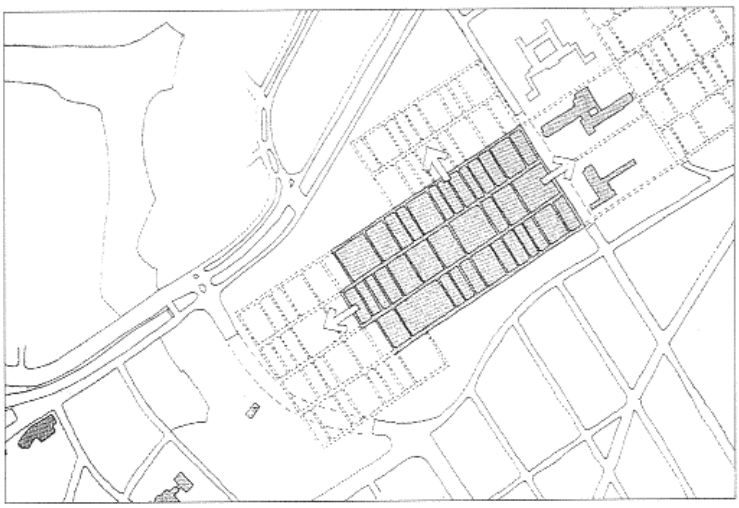


Figure 4.16 Possible future growth of Berlin Free University Project. (Source: Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 18)

Aldo van Eyck states that, "we are confronted with the necessity of evolving structures and forms which can develop in time; which can remain a whole and maintain coherence at all stages of development."[180] Architects must consider well-organized relations between the permanent and transient elements of the urban complex in order not to lose consistency in the whole complex.

Even though infrastructure is a permanent part of the whole structure, it provides the architects with a flexible framework rather than a rigid form; it provides the possibility of open-ended growth and change. According to Smithsons, in their "mat building" concept, building has not fixed form and the final form is hard to predict. Infrastructure provides a

comprehensible and coherent growth and change. It maintains consistency in the design process while allowing flexibility for future changes. For instance, the most significant aspect of the Berlin University project is the structural system that is designed by Jean Prouve. Structural system was developed as a modular and highly flexible system, in order to respond to the uncertainty of the future needs of the university (Figure 4.17). The result is that "the building is no longer regarded as a monument but as a useful instrument for carrying out a variety of ever-changing programmes."[181]

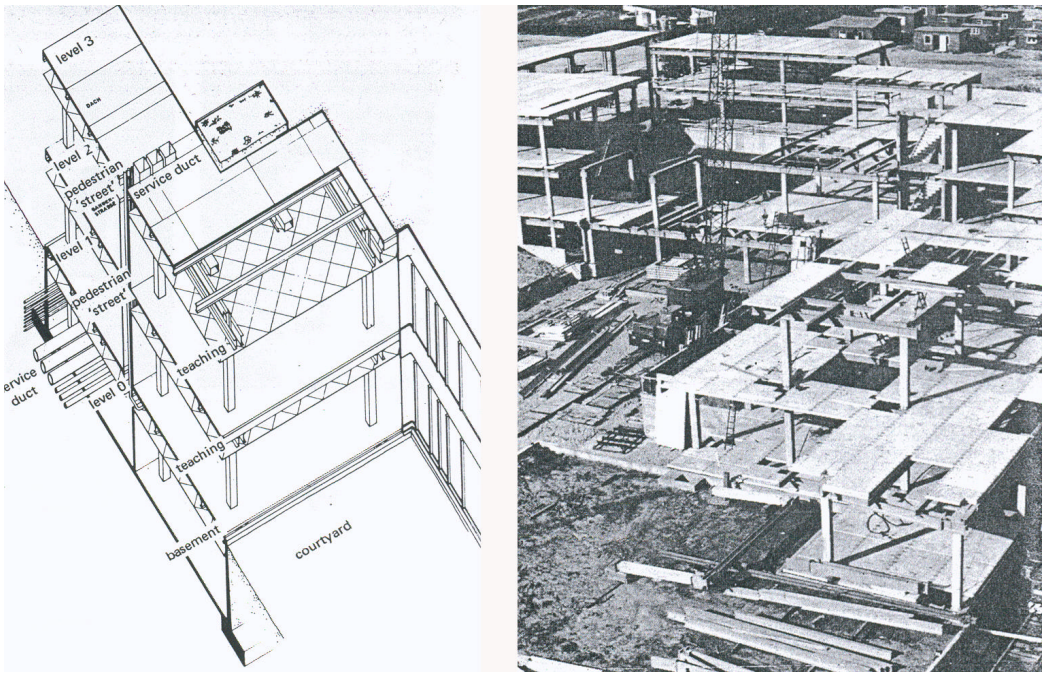


Figure 4.17 Axonometric view of the structural system of Berlin Free University. (Source: "Berlin Free University," *Architectural Design*, vol: 44, no: 1, 1974, p.16.)

The "open form" that is capable of change and growth is the suitable expression of the complex compositional organization of Team 10 projects.[182] Open form answers the

[180] Strauven, "The Dutch contribution: Bakema and Van Eyck," 1992, p.51.

[181] Quoted in "Berlin Free University," *Architectural Design*, vol: 44, no: 1, 1974, 14-17.

needs of the users. Team 10 members thought that an open form or structure is changeable but it does not give way to the loss of the identity of the parts and the whole complex. "The open form" is one of the generative concepts, which comprises flexibility, "variety and diversity of form possible within a system."[183] Oxman, Shadar and Belferman define that an open form has "the potential of expression of the accidental within essentially rule-based systems."[184] The discussions on "open form" show the fact that Team 10 members insert variability into complex compositional order, and consider building as a process not as a typology. This is actually what infrastructural organization suggests.

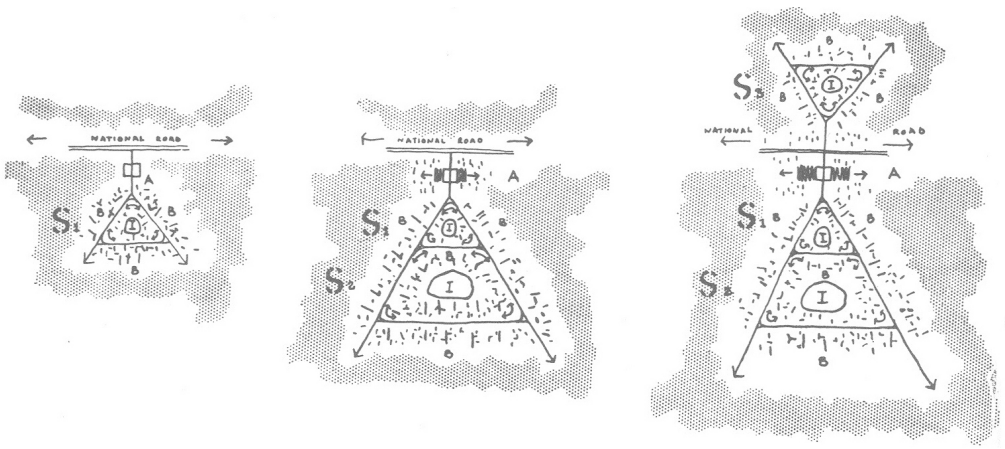


Figure 4.18 Developing town, each phase of which has an identity. (Source: John Lewis, ed., *Urban Structuring- Studies of Alison and Peter Smithson*, 1967, p. 32)

Alison and Peter Smithson were also members of "Independent Group" that was an artistic avant-garde group, including Richard Hamilton, Eduardo Paolozzi, Nigel Henderson and Reyner Banham during the 1950s.[185] For this group, "change,

[182] Smithson, ed., *Team 10 Primer*, 1968, p.45.

[183] Oxman, Shadar and Belferman, "Casbah: a brief history of a design concept," 2002, p.328.

[184] Ibid.

[185] Jonathan Hughes, "The Indeterminate Building," in *Non-Plan, Essays on Freedom, Participation and Change in Modern Architecture and Urbanism*, edited By Jonathan Hughes and Simon Sadler (Oxford: Architectural Press, 2000): 90-103.

flexibility, disorder and flux also came to occupy center stage, and interest in simple proportional rules transformed into the consideration of organic growth and change."[186]

As well as flexibility, *flexible program* is another important consideration for Team 10. In Golden Lane housing project, Smithsons designed house units that were capable of being converted to "house-shops" and "house-workshops. Instead of achieving a totalizing program, which lays down an ideal situation, what the Smithsons were interested in was an infrastructural organization that would respond to the various scales of association (house, street, district and city), and adequately accommodate possible programs and their future changes.[187] Sophie Trelcat states,

> […] The Smithsons prefer to deal with the *programme* in an attempt to establish dialogue with users; increase possibilities of appropriation ensure the flexibility of mechanisms and services, the independence of functional sets, adaptability to changes, transition between each change of scale: floor, building, town, territory…[188]

Programming, according to Hasim Sarkis, diminishes the connection between form and the function. In other words, it provides an *indeterminate* relation between form and function. He emphasizes that, "it helped to loosen the functionalist grip on form."[189]

The members of Team 10 approached to building as a process and in turn to program as a design objective. Their engagement with program instead of functional requirements opens up the way for the development of infrastructural organizations. Their concern was shifted from the building type to the network of relations, which brings flexibility to design.

---

[186] Jonathan Hughes, "The Indeterminate Building," 2000, p.94.

[187] Heuvel, "The diagrams of Team 10," 2000, p. 42.

[188] Trelcat, "Crossed Thoughts on Contemporary City," 2003, p.46.

[189] Sarkis, "The paradoxical Promise of Flexibility," 2001, p.82.

CHAPTER 5

RELEVANCE OF TEAM 10 TO CONTEMPORARY ARCHITECTURE

This chapter studies the significance of Team 10 for contemporary architecture in light of the analysis and discussions in the previous chapters. It brings contemporary architectural examples in order to draw parallels with Team 10.

Team 10's design concepts and strategies have had an obvious influence on architecture and city planning after 1960s. Their emphasis on "topological or territorial aspect" that "any building should be regarded and designed as part of a larger whole, 'a fabric,'"[190] and mobility, flexibility, open form, and their horizontal spatial organizations enhancing association, have opened up the way for the development of new ideas on architectural design and city planning. For instance, it seems that Dutch Structuralists, Metabolists and Situationists were affected by Team 10's thoughts on architecture and city planning.

Smithsons' "Cluster City" concept (utilized for example in the Golden Lane Project) and van Eyck's Amsterdam Orphanage building anticipated Constant's well-known project New Babylon (1959), which is known as the "situationist city"[191] (Figure 5.1). Constant proposes a mega-structure, which is elevated above the ground. Smithsons' continuous "artificial landscape," like in their Haupstadt city center project (Figure 3.1), inspired several utopian architectural proposals. Colquhoun points out that in his proposal for the construction of a new city of ten million people over the water, which is known as the "metabolist city" (1960), Kenzo Tange used design strategies

[190] Dirk van den Heuvel, "Generative Dynamics," *L'Architecture D'Aujourd'hui* 344 (January-February 2003): 33.

[191] Simon Sadler, *The Situationist City* (Massachusetts: MIT Press, 1998): 30.

developed by Team 10 members.[192] For these projects, concepts of mobility, growth and change are important considerations. "Permanent frames" and "plug-in capsules" were the main parts of the Metabolist projects. They considered dynamic aspects of buildings. They designed volumes floating in space according to some basic rules of "permanent frames." In Constant's New Babylon project, Marie-Ange Brayer says, "mazes and labyrinths have been staked out; they are also networks, grids and three dimensional spatial structures which hoist architecture above the territory and turn it into 'artificial landscape'."[193]

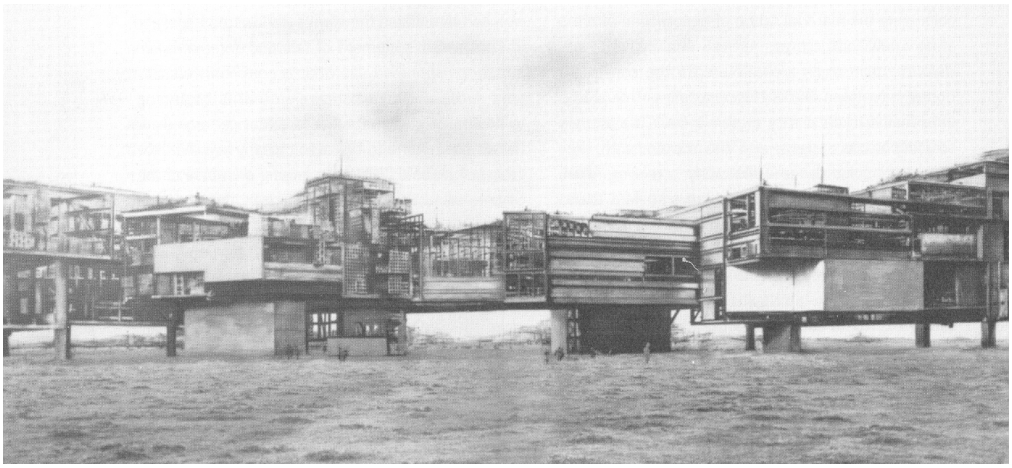


Figure 5.1 Collage View of a new Babylonian Sector by Constant Nieuwenhuys (Source: Simon Sadler, *The Situationist City* (Massachusetts: MIT Press, 1998): 154.)

In her essay "How to recognize and read Mat-Building," Alison Smithson gives examples to illustrate the morphological characteristics of Team 10's projects. Amsterdam Orphanage Building (1957) by van Eyck, Berlin Hauptstandt Competition Proposal (1957) by Smithsons, Berlin Free University (1973) and Frankfurt Town Center Proposal (1963) by Josic, Candilis, Woods, and Venice Hospital Project (1964)

[192] Alan Colquhoun, *Modern Architecture,* 2002, p. 218.

[193] Marie-Ange Brayer, The City of Inhabitat Maps, Mobility and Migration in the Architecture of the 1950s and 1960s.

by Le Corbusier and Jullian are the most significant examples of the mat strategy. Tzonis and Lefaivre point out that Team 10 architectural strategies and works, especially Candilis, Josic and Woods' projects affected Le Corbusier's late projects, the Olivetti Center (1963) and Venice Hospital (1964).[194] In the hospital project, Corbusier and Jullian tried to relate the building to the surrounding environment by means of a large continuous unifying roof. The project is a continual repetitive horizontal structure, which is elevated above the ground level. The project shows that there is a shift from the idea of functional segregation (as declared by Le Corbusier at The Athens Charter, 1943) to the idea of "human association" and network of relations.

5.1 Architecture as an Infrastructural Organization

> The image was discovered within the process of making the work. It was not prefigured but looked-for as a phenomenon within the process.[195]

Today, decades after Team 10's first meeting in 1954, the concepts (such as "mobility" and "flexibility") by which Team 10 members approached the contemporary city, and the design strategies they developed to accomplish the requirements of the modern urban space are still significant. Rapid development of information, communication, transportation and production technologies enhances the significance of mobility and communication. In contemporary architecture and city planning, Team 10 members' arguments that consider the changing life styles of people and technological developments still preserve their validity.

As it is stated by K. Michael Hays, today, the architectural form is to be "an instigator of performances and responses, a frame that suggests rather than fixes, that maps or diagrams possibilities that will be realized only partially at any one time."[196] Actually,

---

[194] Alexander Tzonis and Liane Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time in Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 138.

[195] Dirk van den Heuvel, "Generative Dynamics," *L'Architecture D'Aujourd'hui* 344 (January-February 2003): 33.

[196] K. Michael Hays, "Points of Influence and Lines of Development," 1999, p.5.

this is what in 1950s, Team 10 argued for the necessity of designing a flexible system, and open form that promotes possibilities of differences and changes for programmatic activities.

As it is stated in the previous chapter, Team 10 designed infrastructural organizations. Infrastructure, which is the operational tool of organization, defines the basic rules of the organization, such as how programmatic parts are combined or how structure is expanded. Infrastructural organization means combination of different programmatic elements or layers in a unified composition that organizes different human activities and supplies flexible framework for architectural design. It provides overlapping different programmatic layers and human activities. It suggests an evolutionary continuous process that organizes yet to come changes. Its architectural form is capable to grow and change in time according to basic organizational rules. Infrastructural organizations make the project more mobile and flexible and open ended.

Considering the contemporary architecture, Gregg Pasquarelli emphasizes that "[i]nstead of being guided by a concern for the purely functional or purely formal, we need to investigate processes-not only the processes involved in construction but also processes of design."[197] In fact, it might be said that this is what Team 10 members intended: Instead of fixed and finished forms, they envisaged infrastructural organizations that could accommodate changeable and variable structures. Infrastructural organizations guide the process of design. They help architects to free themselves from "purely functional and purely formal" aspects of architectural design.

A number of contemporary architects argue for the fact that a building is not static, finished product, instead it should be approached as a process; they think that time as a fourth dimension should be considered in the process of design. According to Allen, "what form can do" (in response to the flexible environmental conditions) is more important that "what it looks like," as an object.[198]

---

[197] Gregg Pasquarelli, "Architecture Beyond Form," Bernard Tschumi and Irene Cheng, eds., *The State of Architecture at the Beginning of the 21st Century*, (New York: The Monacelli Press, 2003): 24.

[198] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.57.

In the essay, "What is Integral Urbanism?" Nan Ellin emphasizes the importance of three-dimensional webs or networks to constitute well-balanced spatial organizations. Her argument on "Integral Urbanism" recalls Team 10's architectural ideas in 1950s and 60s. She points out the qualities of integral urbanism:

> networks not boundaries; relationships and connections not objects; interdependence; natural and social communities as well as individuals; flux not stasis; permeability not permanence, movement from place to place not stability.[199]

Candilis, Josic and Woods' "stem" and "web" configuration, Smithsons' "mat building" and van Eyck's "configurative discipline" produced infrastructural organizations. Like Ellin, Woods emphasized the significance of web or network as an operative tool to organize relations and connections between different programmatic units and to surpass the disadvantage of static forms, not capable of growth and change.

Infrastructural organizations combine "programs, events" and also the "movements of bodies" in a unity. Bernard Tschumi points out that, "architects have become not only designers of the stage set but also choreographers of human activities."[200] Team 10 argues for the infrastructural spatial organizations to enhance human association, interaction and relation. Infrastructure or backbone of a structure provides a permanent background in both physical sense -related with architectural form- and social sense -related with "human association"- for the mobile, dynamic and flexible spatial organizations.

It is noticeable that in recent years, Stan Allen has referred to the Team 10's architectural thoughts on the city. Like Team 10 members, Allen emphasizes the importance of infrastructure (or "permanent background", as it was called by Smithsons,) for spatial organizations because infrastructure supplies flexibility in architectural and urban design. Allen introduces "infrastructural urbanism," which suggests an "undetermined approach" to urbanism, and allows for future extensions.

---

[199] Nan Ellin, "What is Integral Urbanism?" 30 Nov. 2004, personal email (2 December 2004).

[200] Bernard Tschumi, "Organization + Bodies," Bernard Tschumi and Irene Cheng, eds., *The State of Architecture at the Beginning of the 21st Century*, (New York: The Monacelli Press, 2003): 24.

5.1.1 "Infrastructural Urbanism" by Stan Allen

In his book *Points and Lines: Diagrams and Projects for the city* (1999), Allen explains "Infrastructural Urbanism," and discusses the shift from formalist approach toward infrastructural organizations in architecture.

> [...] I want to situate the shift in recent practice toward infrastructure. Going beyond stylistic or formal issues, infrastructural urbanism offers a new model for practice and a renewed sense of architecture's potential to structure the future of the city.[201]

His argument concerning the "architect's potential to structure the future of the city," reminds Team 10's approach to the contemporary city. Allen propounds, "a practice not devoted to the production of autonomous objects, but rather to the production of directed fields in which program, event, and activity can play themselves out."[202] In explaining infrastructure, like Team 10 members, Allen emphasizes the significance of "communication" and "movement." Allen points out that "the establishment of networks" supports "*movement, communication and exchange*."[203] To remember: Team 10 members unite movement and communication systems into one system (that is "dualistic planning strategy").

Here, the similarities between Allen's and Team 10's approaches to the infrastructure should be emphasized. In order to give direction to future expansions, architects need permanent element. For both of them, this permanent element is infrastructure. It is the long-term structure, which forms and identifies the basis of the whole complex. Infrastructure is an instrument to establish network of communication and well-balanced relation between different speeds of movement in the city. Allen considers infrastructure as a technical means to deal with communication and mobility.[204] In their discussions on architecture, both Smithsons and Allen refer to infrastructural organizations, which work instrumentally and establish suitable conditions for the

---

[201] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.52.

[202] Ibid.

[203] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.54.

[204] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.52.

future applications. Allen explains the characteristics of infrastructural organization as the follows:

> 1. Infrastructure works not so much to propose specific buildings on given sites, but to construct the site itself. Infrastructure prepares the ground for future building and creates *the conditions for future events*. [...]
> 2. Infrastructures are *flexible and anticipatory*. [...]
> 3. Infrastructural work recognizes the collective nature of the city and allows for *the participatory of multiple authors*. [...]
> 4. Infrastructure accommodate *local contingency* while maintaining overall continuity. [...]
> 5. Infrastructures organize and manage *complex systems of flow, movement and exchange*. [...]
> 6. Infrastructural systems work like *artificial ecologies*. [...]
> 7. Infrastructures allow detailed design of typical elements or repetitive structures, facilitating *an architectural approach to urbanism*. [...][205]

Allen's explanations of infrastructure show some parallels to Team 10 arguments on "permanent background," which provides a flexible framework rather than a rigid form for possible programs and their future changes.

5.1.2 "Directed Field" as "Background Permanency"

In his essay "Field Conditions," Allen emphasizes that complex interrelations are more important than "overarching geometrical schemas" in dynamic architectural organizations. In explaining "field condition," he states,

> [...] we might suggest that a field condition would be any formal or spatial matrix capable of unifying diverse elements while respecting the identity of each. Field configurations are loosely bounded aggregates characterized by porosity and local interconnectivity. [206]

As in the explanation of Bakema on identity, in all stages of multiplication or association of the parts to constitute the complex, identity of the parts and individuals is one of the main concerns for defining the whole structure. In field condition too, the identity of each part is important.

---

[205] Ibid. pp.54-57. [Emphasis mine]

[206] Stan Allen, "From Object to Field," *Architectural Design* 67 no 5/6 (may/June 1997), p.24.

Van Eyck's attempt to compose complex compositional orders and determine relations for multiplication can be compared with Allen's field organizations. Allen points out that "repetition" is one of the key concepts of field configuration.[207] In field organizations, repetitive structure defines the principles of the "directed field." For instance, Van Eyck's Orphanage Project that is based on repetitive elements and Allen's the Reconstruction of the Souks of Beirut project that is based on a series of continuous surfaces, have the same underpinning that aims to accomplish "the art of the great number"[208] (Figure 5.2). Both architects emphasize necessity of evolution of a structure or a complex in time without losing comprehensibility at all stages of growth and change.

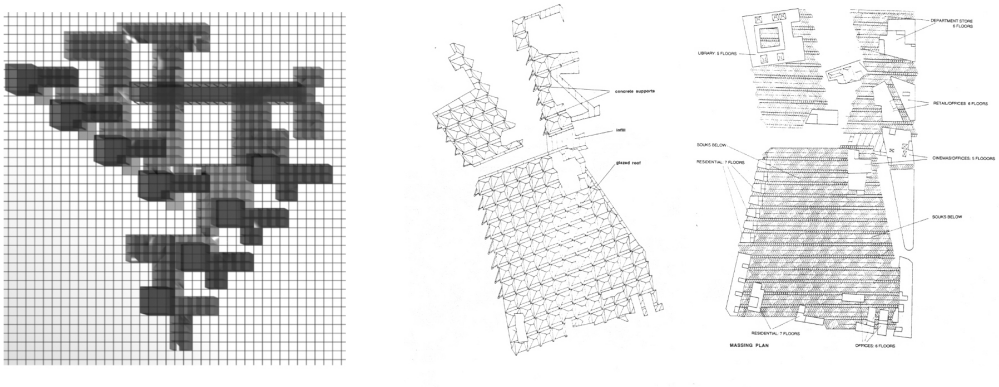


Figure 5.2 from left to right: Van Eyck's Orphanage Project; Allen's Reconstruction of the Souks of Beirut. (Yüksel, 2005. Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.65.)

Allen explains his design strategy as a designation of "the traces of an architectural infrastructure that would allow flexible development while maintaining unified identity: *a directed field* within which the future of life of the site could unfold [...]."[209]

[207] Ibid.

[208] Aldo van Eyck, in: *Forum*, June, 1952. Quoted in Dirk van den Heuvel,"The Diagrams of Team 10," *Daidalos* no: 74, 2000, pp.40-52

[209] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.73. [Emphasis mine]

Directed field includes fixed points or permanent elements of the structure that are service, access, and structure.[210] "Directed field" is, what Smithsons called, the *background permanency* of the whole composition. "Permanent background" defines the principles of organization, growth and change, and provides comprehensibility in the design process. Both "directed field" and "background permanency" consist of basic principles of the organization to create a space of non-linear interaction and association and to anticipate future development. Directed field inserts the fourth dimension, time dimension, into the architectural design, as in the Team 10 design strategies in which space and time are linked together.

Team 10 members and Allen emphasize the significance of growth and change. Allen points out that, "[f]ield configurations are inherently expandable; the possibility of incremental growth is anticipated in the mathematical relations of the parts."[211] Field condition is more than fixed formal configuration, instead it "implies an architecture that admits change, accident, and improvisation. It is an architecture not invested in durability, stability, and certainty, but an architecture that leaves space for the uncertainty of the real."[212] Team 10 members do not design a finished object rather they make an architectural organization that possesses some basic principles responding to "the uncertainty of the real." It might be said that their thoughts on infrastructural organizations form the basis of Allen's "infrastructural urbanism." His "infrastructural urbanism" includes space/time, movement, mobility, flexibility and variability that are the significant considerations in Team 10 members' design work.

Allen employs infrastructural organizations in his several projects, such as the Reconstruction of the Souks of Beirut (1994) and the arrangement of Logistical Activities Zone of Barcelona (1996). In the arrangement of Logistical Activities Zone, he employs infrastructure, as a backbone structure, to achieve a flexible complex (Figure 5.3). He thinks that, "infrastructure creates a directed field where different architects and designers can contribute."[213]

---

[210] Ibid., p.55.

[211] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.94.

[212] Ibid., p.102.

Allen, in the arrangement of Logistical Activities Zone Project, searches for a flexible and variable organization. Like Team 10 members, he defines permanent and transient part of the whole structure. In the project of Logistical Activities Zone, Allen organizes two types of surface areas that are *patches* and *corridors* (Figure 5.3). He describes patches as "nonlinear surface areas" that are able to contain possible future programs. These nonlinear surface areas are the transient parts of the complex. The other surface areas are linear surfaces, which are corridors, what Allen calls as "network connectivity," and form the permanent parts of the complex. The corridors are like "streets-in-the-air" in Smithsons' Golden Lane project; they are permanent lines, which combine different programmatic units and also arrange transportation and communication -human association. Similar to Smithsons' Golden Lane or Josic, Candilis, Woods' Frankfurt-Römerberg Competition Project, pedestrian circulation network, which constitutes the infrastructure or permanent background of the complex, is arranged at an upper level in the Logistical Activities Zone Project.[214]

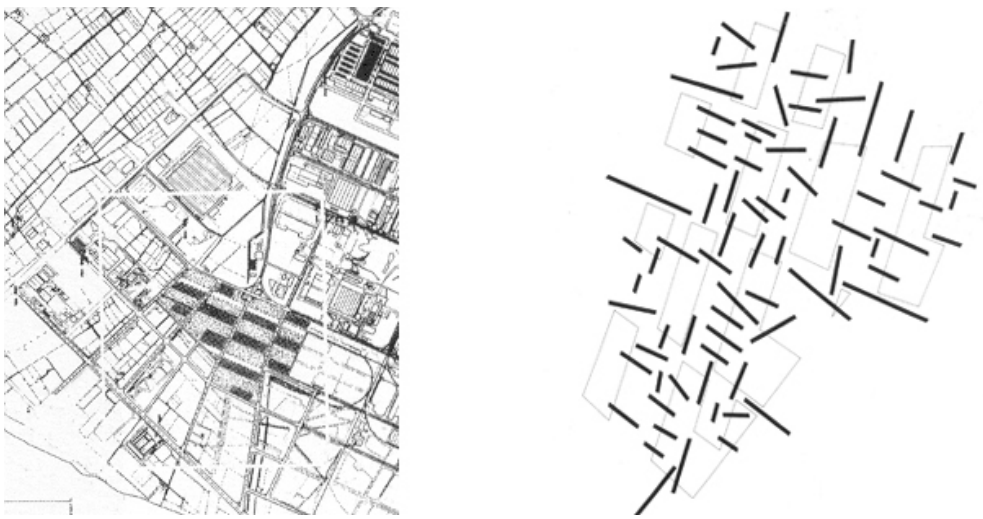


Figure 5.3 From left to right: Patches; Corridors + Connectivity (Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.78, 83.)

[213] Ibid., p.55.

[214] Stan Allen, 2002, "Logistical Activities Zone," *Prototypo*
[Internet, WWW].ADDRESS: http:// /www.prototypo.com/Essays/Essays2/002_2.htm
[Accessed: 05 Jan 2005]

Connectivity has a similar meaning with *association*. Network connectivity is the permanent layer of the complex that systematizes how diverse programmatic elements relate each other, how a new programmatic element can be inserted into the complex and how individuals interact and communicate with each other. The whole complex organization is a combination of these permanent and temporary layers.

Patches (transient parts of the structure) are organized according to different programmatic categories, such as workshops, showrooms, services and recreational places, and connected to the corridors. Patches are thought to respond to new programmatic relations. Allen points out that creating a structured field condition refers to "architecturally specific yet programmatically indeterminate [...]"[215]

In his arrangement of Logistical Activities Zone Project, Allen considers corridors (circulation patterns) as an infrastructural tool or as the constituent element of the network. It is evident that the circulation pattern for a city and for a building is the main strategic tool to create a comprehensible structure.

5.2 Mobility and Flexibility

> [M]obility and flexibility both environmental means of enhancing and sustaining social interaction and maximization of choice. Design movement meant not just mobile people and objects circulating in space – the whole project was conceived as an object in flux, transforming itself in relation to people's changing needs and aspirations.[216]

Alison Smithson's idea that "[m]obility has become the characteristic of our period" is still relevant for a number of architects and city planners. The problem of mobility is to be solved with a comprehensible pattern of circulation. Clarity of circulation pattern is essential to design since it contributes to the creation of well-balanced network of association.

---

[215] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.74.

[216] Alexander Tzonis and Liane Lefaivre, "Beyond Monuments, Beyond Zip-a-tone. Into Space/Time in Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 129-131.

As it is stated before, Team 10 considers street as an important element of the city to supply not only easy circulation but also "human association." Smithsons' idea that "roads are also *places*" demonstrates their emphasis on the road network system.[217] The street is a tool that "was motivated by the need to match the physical structure of the city with its social use."[218] It is an arena for socialization and relation between people. The street was conceived as a preeminent source of life and it is considered as "a medium of social awareness and movement."[219]

Considering mobility, Luisa Maria Calabrese in her essay, "Overture," emphasizes the importance of road system in the contemporary design process. She states that, "[...] the road is recognized as the new ordering principle not only for specific buildings on given sites, but to construct the site itself [...] The new role of the road [is] a regulator of both city and its landscapes."[220]

Mobility and patterns of relations are significant in the works of both Smithsons and Rem Koolhaas. For them the road network system is a structural component of town planning. In order to propose easy movement, different circulation systems -pedestrian and vehicular circulation, railway network- are designed on different levels, to be free from each other (Figure 5.4).

Team 10's approach to the pedestrian circulation pattern as an infrastructure or a regulator of the complex is still valuable for creating networks of association in architectural design. Moreover, the separation of pedestrian and vehicular traffic in their projects is the source of inspiration for recent architectural project.

---

[217] Alison and Peter Smithson, "Mobility Road System," *Architectural Review*, (Nov. 1957) .Quoted in Sophie Trelcat, "Crossed Thoughts on Contemporary City," 2003, p.52. [Emphasis mine]

[218] Luisa Maria Clabrese, "Overture," Francine Houben, Luisa Maria Calabrese, eds, *Mobility: A Room with a View*, (Rotterdam: NAi, 2003): 90.

[219] Lucy Bullivant, "The Street," Ally Ireson and Nick Barley, eds, *City Levels,* (London, Birkhauser, 2000): 73.

[220] Luisa Maria Clabrese, "Overture," p.91.

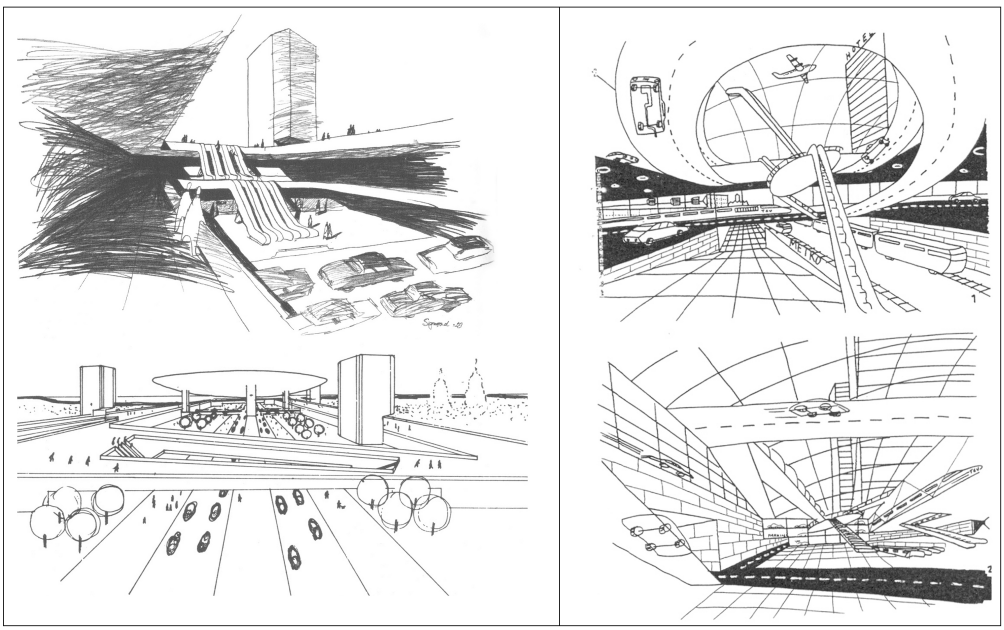


Figure 5.4 Top and bottom left: Berlin Haupstadt Project (1958) by Smithsons; Top and bottom right Eurolille (1989) by Rem Koolhaas. (John Lewis, ed., *Urban Structuring-Studies of Alison and Peter Smithson*, 1967, pp. 52,53. Trelcat, Sophie. "Crossed Thoughts on Contemporary City," *L'Architecture D'Aujourd'hui*, 344. (2003): 49.

Like Smithsons' Sheffield University project, in Bernard Tschumi's Le Fresnoy project, Center for Contemporary Arts, network of pedestrian movement is an important consideration (Figure 5.5). Unifying roof, which contains mechanical services, such as air conditioning, heating and ventilation, and suspended pedestrian circulation above the existing and new buildings are the infrastructural elements of the whole complex. Tschumi's aim is to provide continuous circulation among independent parts of the complex. The network of pedestrian street associates different programmatic "boxes", which are a school, a film studio, exhibition halls, laboratories and two cinemas, offices, housing and a restaurant.

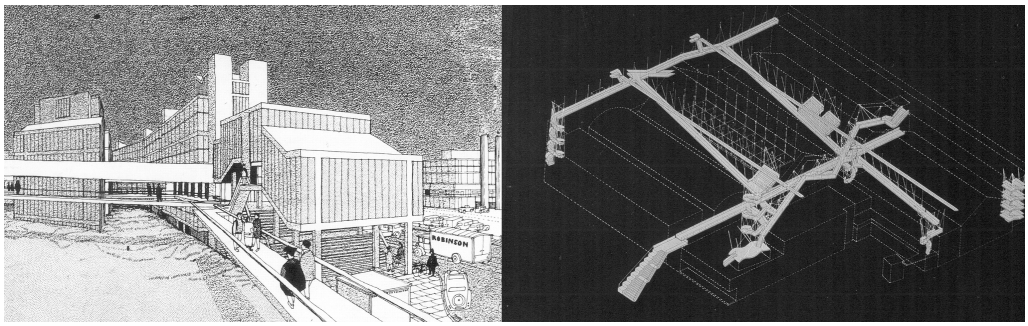


Figure 5.5 From left to right: Sheffield University project by Smithsons (1953); Le Fresnoy by Bernard Tschumi (1993). (Source: Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture*, Alison and Peter Smithson, (New York: The Monacelli Press, 2001): 110; "Rethinking Mobility," *Quaderens* 218. (1997): 34.

Tschumi covers all programmatic "boxes" by means of a unifying roof with large openings. Tschumi points out that "At Fresnoy we can speak of an 'architecture-event" rather than an 'architecture-object'."[221] All "events, conventions, concerts, sports, exhibitions," are associated in one complex horizontal organization.

Victoria Acebo and Angel Alonso design a large-scale urban development for Northern Osaka Station Area Competition (Figure 5.6). It is an infrastructural organization that brings forth simultaneously both an architectural approach to urbanism and an urbanistic approach to architecture. The relationship between public and private places that establishes scale of human association is one of the important considerations for the architects. Acebo and Alonso explain their design objectives; "to establish a method for balanced growth of public space and private space, [...] to integrate different programmes in a multifunctional structure."[222] Acebo and Alonso's diagram of movement shows different speeds of flow in the complex, namely "high, medium and slow speed" (Figure 5.6). This reminds Smithsons' statement that "[w]e are more concerned with flow than with measure."[223]

[221] Bernard Tschumi, "Le Fresnoy, Center for Contemporary Arts," *Quaderens* 218. (1997): 30.

[222] "Eastern Bipolar Hyperconnected City," *El Croquis* 115, 2003, pp.58-65.

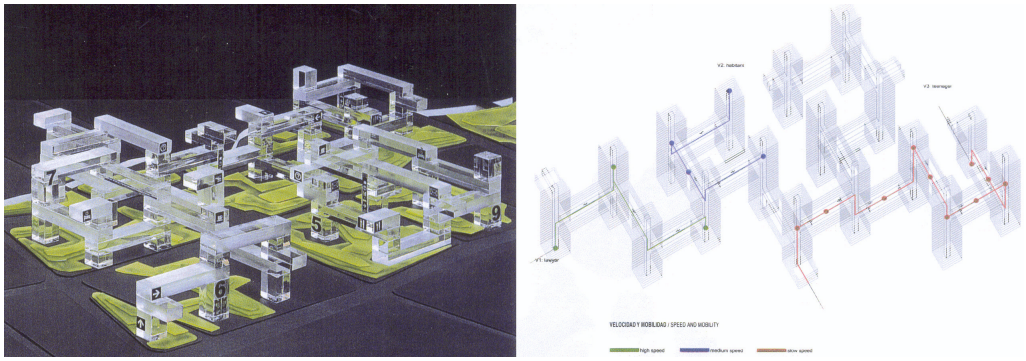


Figure 5.6 Eastern Bipolar Hyperconnected City by Victoria Acebo and Angel Alonso (2003). (Source: "Eastern Bipolar Hyperconnected City," *El Croquis* 115, 2003, pp.58-65.)

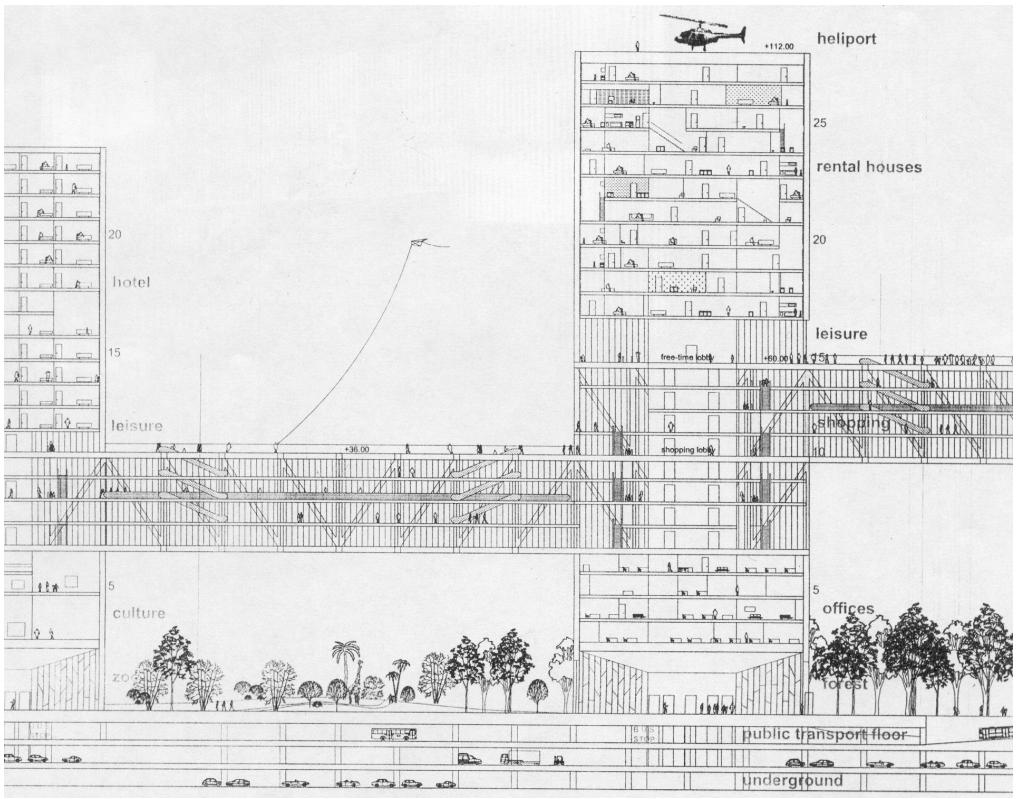


Figure 5.7 Section of Eastern Bipolar Hyperconnected City. (Source: "Eastern Bipolar Hyperconnected City," *El Croquis* 115, 2003, pp.58-65.)

[223] Alison and Peter Smithson, *Ordinariness and Light*, 1970, p. 130.

Similar to Smithsons' Golden Lane project, they design different levels of pedestrian decks to separate different speeds of movement, to organize different human activities or human association, and to combine different programmatic units (working places, commercial places, dwellings, hotel, botanical garden) in one complex structure (Figure 5.6, 5.7). It is in this sense that their approach might recall Smithsons' "dualistic planning strategy," which articulates streets or decks as places for not only circulation but also communication between people.

As it is explained before, Woods mentions different connotations of mobility that are related with movement, time, economy, and rapid mass-distribution. He emphasizes that mobility cannot be reduced only to movement in space. After decades, like Woods, François Asher points out the large spectrum of the connotations of mobility,

> History of contemporary times is also the history of urban mobility. This is a mobility, which cannot merely be reduced to movement in space. It is a continual process, starting with structures of the economy and ending with social relations [...] the development of information technologies, communication and transport has taken an active role in contributing to it.[224]

Then, mobility is not only related with different speeds of movement but also with time dimension, growth and change of space. The rapid development of information, communication and transformation technologies enhance mobility.

As it is mentioned in the previous chapter, Team 10 members considered the city as a mobile and flexible environment. They tried to form a spatial organization that corresponds to mobility and flexibility. As declared by Smithsons, the aesthetics of the architectural organization should be a sign of the appropriate cycle of change.[225] Similar to Team 10 members' consideration, Allen does not consider the city as a static object, and he states,

> [...] The contemporary city is not reducible to an artifact. The city is a place where visible and invisible streams of information, capital and subjects interact in complex formations. They form a dispersed field, *a network of flows*. [226]

[224] François Asher, "Mobility," *Quaderens* 218. (1997): 50.

[225] Smithson, eds., *Team 10 Primer*, 1968, p.71.

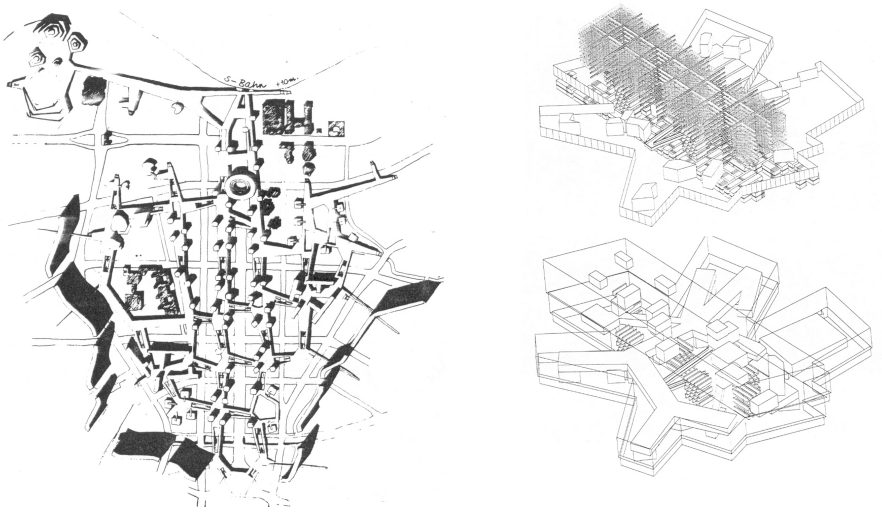


Figure 5.8 From left to right: Berlin Haupstadt Project (1958) by Smithsons; National Diet Library (1996) by Stan Allen (Source: John Lewis, ed., *Urban Structuring- Studies of Alison and Peter Smithson*, 1967, p.58. Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.127.)

In Berlin Haupstadt Project by Smithsons and National Diet Library by Stan Allen, architects use repetitive elements of vertical circulation (permanent *points*, such as elevators) and pedestrian circulation network in the air (permanent *lines*), which all together make the infrastructure of the complex.

In Allen's library project, the organization is not rigid; instead he creates "an open aesthetic" as Smithsons called. By means of an extendable structural system of the building, Allen brings an approach to design, which is not static yet flexible and dynamic. Like Josic, Candilis, Woods' Berlin Free University Project (Figure 4.8), Allen draws how his library might extend in time according to the future needs. He suggests that a "system with permeable boundaries, flexible internal relationship, multiple pathways and fluid hierarchies" supports flexibility and complexity of design.[227]

---

[226] Stan Allen, 2000, "Logistical Activities Zone,"
[Internet, WWW].ADDRESS: http:// /www.prototypo.com/Essays/Essays2/002_2.htm
[Accessed: 05 Jan 2005] [Emphasis mine]

[227] Stan Allen, "From Object to Field," *Architectural Design* 67 no 5/6 (may/June 1997), pp.24-31.

5.3 Repetition and Variation

> Flexibility is most easily achieved in a simple, repetitive, continuous structure.[228]

In Team 10 projects, infrastructural organizations are based on a pattern of repetition and variation within the unity of composition. Repetition in the form of rhythm is a simple principle of composition, which tends to give a comprehensibility and coherence in architectural organization. Allen points out that "[i]nfrastructures allow detailed design of typical elements or repetitive structures, facilitating an architectural approach to urbanism [...] infrastructural complexes are technical and instrumental."[229] It is instrumental since it shows how units are repeated in a comprehensible and coherent way while allowing flexibility. Sarkis, in his essay, "The Paradoxical Promise of Flexibility," points out that, "flexibility is attained by establishing a possible combination and recombination of a series of spaces that are specific in dimension but generic in form."[230]

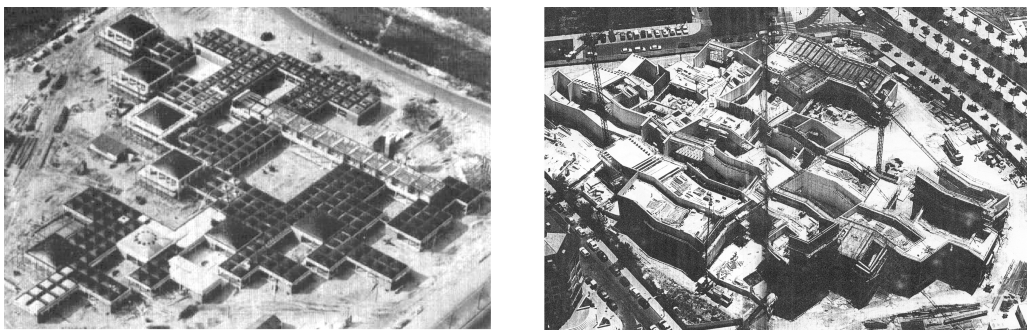


Figure 5.9 From left to right: Amsterdam Orphanage Building (1955) by Aldo VanEyck; Musac in Leon (2001) by Mansilla+Tunon (Source: *Architectural Design*, May 1960 p.179. *El Croquis* 115, 2003, pp.54-55.)

[228] Sze Tsung Leong and Ghuihua Judy Chung, ed., *The Charged Void: Architecture, Alison and Peter Smithson*, (New York: The Monacelli Press, 2001): 108.

[229] Stan Allen, *Points and Lines: Diagrams and projects for The City*, 1999, p.86.

[230] Sarkis, "The paradoxical Promise of Flexibility," 2001, p.88.

In van Eyck's Amsterdam Orphanage project, the process of design is based on identical repetitive square units. Orphanage building is developed on the orthogonal grid structure. It is this grid structure that defines repetitive units (Figure 4.11). Combination of the square units constitutes different programmatic elements, courtyards and the pedestrian street. The grid structure and repetition of units allow the architect immense variability and flexibility for different needs and future changes.

Like van Eyck in Amsterdam Orphanage project, Mansilla+Tunon in their Modern Art Museum Project use "configurative pattern" to compose their complex composition. In this project, architects develop a continuous and integrated urban form by means of repetitive units. The complex becomes an expandable modular structure open to growth and change. Van Eyck's "labyrinthine clarity" can easily be noticed in Mansilla+Tunon's Museum Project (Figure 5.9). By means of repetition of units, architects produce a continuous and differentiated fabric of building rather than a finished object. In other words, the building tends to appear as a continuous structure, rather than an independent object.

In Mediterranean Hospital Project by NJIRC architects consider an orthogonal pedestrian circulation network as an infrastructure or a network of association, which combines different programmatic units and the courtyards (Figure 5.10). As in van Eyck's Orphanage project, architects design differently articulated courtyards. Each courtyard is identified by means of different local vegetation. NJIRC architects emphasize that "[t]he inherited issues of the Team 10 legacy are subjected to mutation, producing a variety of articulated courtyards."[231] The pedestrian street network arranges both public places for all patients and medical persons, and also private places for only medical persons. In other word, it organizes different scales of associations.

[231] "A Mediterranean Hospital for The Generation Zero*," El Croquis* 114, 2003, p.96.

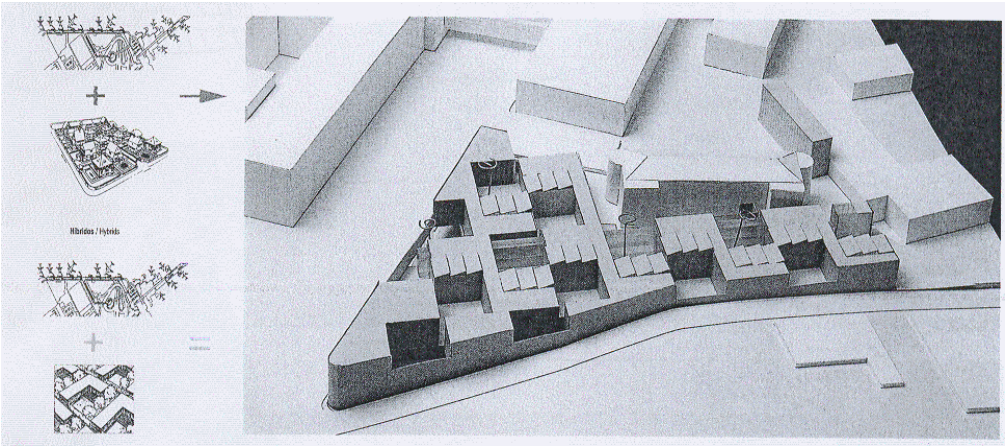


Figure 5.10 Mediterranean Hospital (2002) by NJIRC (Source: *El croquis* 114, 2003, p.101.)

5.4 Spatial Matrix of Relations

Team 10 members realized that "reciprocal relationship and immediate interactions" are more important than a fixed hierarchical structure. They tried to employ the purposive potential of association and relation to develop a well-balanced spatial organization instead of searching for an impressive finished form. They considered the relation between different parts that constitute whole composition, and also effective human relation.

Team 10 members tried to achieve a well-organized spatial matrix of relations between different programmatic layers. Combination of these programmatic layers constitutes the whole complex. Network of circulation is deemed as a permanent layer of the complex. For instance, in Candilis, Josic and Woods' Berlin Free University project architects overlapped different programmatic layers, and combined these layers by means of web of circulation.

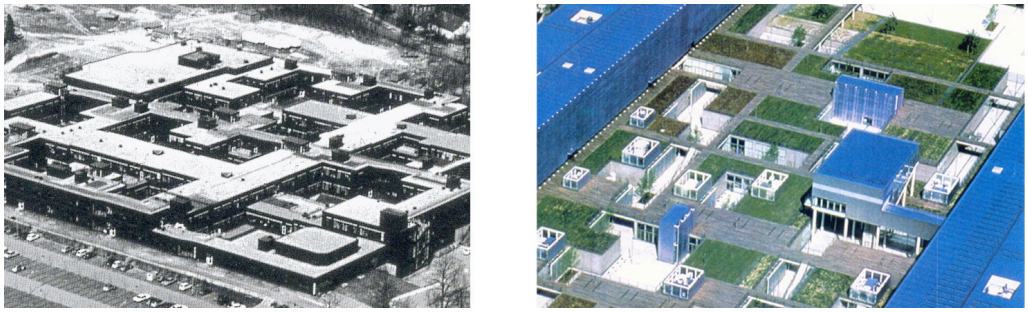


Figure 5.11 From left to right: Berlin Free University (1964) by Josic, Candilis, Woods; Saitama Prefecture University (1995) by Riken Yamamoto. (Source: Pamela Jonston, ed., *Examplary Projects 3* (London: Architectural Association, 1999): 16. *Lotus* 111, 2001, p.79.)

Similar to Berlin Free University, Saitama Prefectural University of Nursing and Welfare (1995) by Riken Yamamoto is an infrastructural organization (Figure 5.11). Yamamoto points out that the main idea is

> […] maintaining the autonomy of each discipline, it is important that they don't become closed and that they maintain an open link, a network between them, like a social system.[232]

Whilst each specialized medical departments maintains its distinctive character, interrelation among them is essentially considered in this project. Yamamoto remarks that, "the interrelationships of different courses of study are indeed more important than the self-sufficiency of each curriculum [...]"[233]Form of the complex is developed more by the connection of parts than by the overall geometric figure. Yamamoto tries to create a spatial network of relation for different courses of medical study. Yamamoto's consideration is similar to the main idea of Candilis, Josic and Woods' Berlin Free University, which is an association of different departments. In his Saitama Prefecture University project, Yamamoto combines pedestrian circulation network and communication system as an infrastructure of the medical complex (that is "Dualistic Planning Strategy"). Network of pedestrian deck, sunken gardens and two media galleries, which are located on both sides of the complex, are the main parts of this complex organization.

[232] Riken Yamamoto, "Saitama Prefectural University of Nursing and Welfare, Japan": [Internet, WWW] ADDRESS: http://home.kimo.com.tw/jcshih2000/precedent1.htm [Accessed: 2 April 2005]

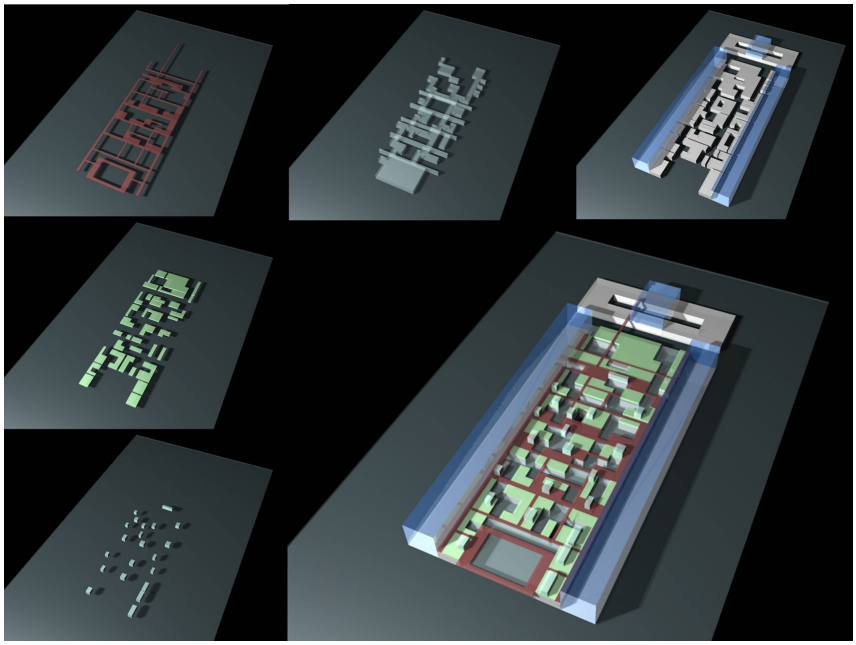


Figure 5.12 Analysis of the Saitama Prefecture University. From top left to top right: Pedestrian street network (high activity zone); pattern of sunken gardens (semi private zone); two media galleries and medical practice units at the center; grassed areas (high activity zone); access cubes; whole complex. (Source: Drawn by Melih Yuksel, Ebru Inci, Buket Demirel. for the presentation for ARCH 609, *Advanced Themes in Architecture and Urban Design* in 24.10.2002)

The pedestrian deck network and sunken gardens provide places for "human association" and opportunities for communication between students and academicians, who specialize at different medical disciplines. Both pedestrian decks and sunken gardens are combined to each other by repetitive vertical circulation elements, which are access cubes. These two overlapping layers constitute infrastructure of the whole medical complex. All facilities for medical experiments and practice are arranged on the ground floor. They are the sunken gardens that combine these facilities and provide human association. Sunken gardens have a "mazelike" form, similar to the labyrinthine circulation of van Eyck's Orphanage project. Yamamoto treats the roof terraces as a continuous artificial landscape. This roof garden with its porous appearance "could be a symbol for the university, one very different from some symbolic form."[234] Its architecture is a good example of a horizontal architectural organization.

[233] Riken Yamamoto, "Saitama Prefecture University," *Lotus* 111, 2001, p.74.

CHAPTER 6

CONCLUSION

This thesis has focused on Team 10's approach to architectural design and urbanism, and aimed at illustrating its relevance for contemporary architectural theory and practice. Team 10's design strategies that have been reinterpreted in recent architectural thoughts and practices attest that these are still valuable for contemporary architectural and urban design.

Team 10 members criticized the idea of functional separation and dwelled on the idea of human association. Therefore, they searched for new formal structures or organizations to accomplish an "ideal pattern of association." An ideal pattern of association is a systematic organization of programmatic units in a harmonious and complex order that supports human relations and communication. Team 10 members developed different architectural design strategies: Smithsons' "mat-building" and "dualistic planning strategy," Van Eyck's "configurative discipline," and Woods' "stem and web." Actually, these design strategies are complementary to each other, and the organization of human association is their main concern.

In this thesis, Team 10's design strategies, architectural projects and essays on architecture and urbanism have been examined and evaluated. The notions of infrastructural organization, mobility, flexibility, layering, programming, spatial matrix of relations, adaptability to change and growth, repetition and variation have been brought into discussion as significant issues.

Team 10's thoughts on architecture and urbanism in 1950s and 60s led to a shift of emphasis from specific objects to spatial organization of relations, which are capable

[234] Ibid.

of growth and change according to users' needs. It is a considerable shift that brings into architecture a new approach to building as a process that responds to future programmatic changes.

Team 10 projects are infrastructural organizations. Infrastructural organizations suggest an architectural approach to urbanism and an urbanistic approach to architecture. They consider "a city as a building" and "a building as a city." Team 10 projects question the boundary between architecture and urban design. Team 10 members "move up in scale from architecture to urbanism." For instance, Smithsons' Golden Lane proposal and Candilis, Josic and Woods' Frankfurt-Römerberg Competition project are infrastructural organizations where the architects bring an urbanistic approach to architecture.

By adopting an approach to architectural design, which favored infrastructural organizations, Team 10 members design not the objects themselves but the processes that generate new spatial configurations. An infrastructural organization provides a generative framework that opens up the way for differences and variations. It frees from fixed relations, yet diagrams/maps future possible programmatic changes. It is in this sense that we may argue that relationships between infrastructure and program *replaces* relationships between form and function.

Actually, Team 10 members' emphasis on architectural organizations instead of issues of style or ideal geometric organizations renders their work relevant for contemporary architectural design. Their projects are "antifigural, antirepresentational, and antimonumental."[235] They are architectural organizations that combine programs, events, and the movements of bodies in a unity of organization. They are examples of an "open form" that responds to possible programmatic changes and different events.

[235] Stan Allen, "Mat Urbanism: The Thick 2-D," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 122.

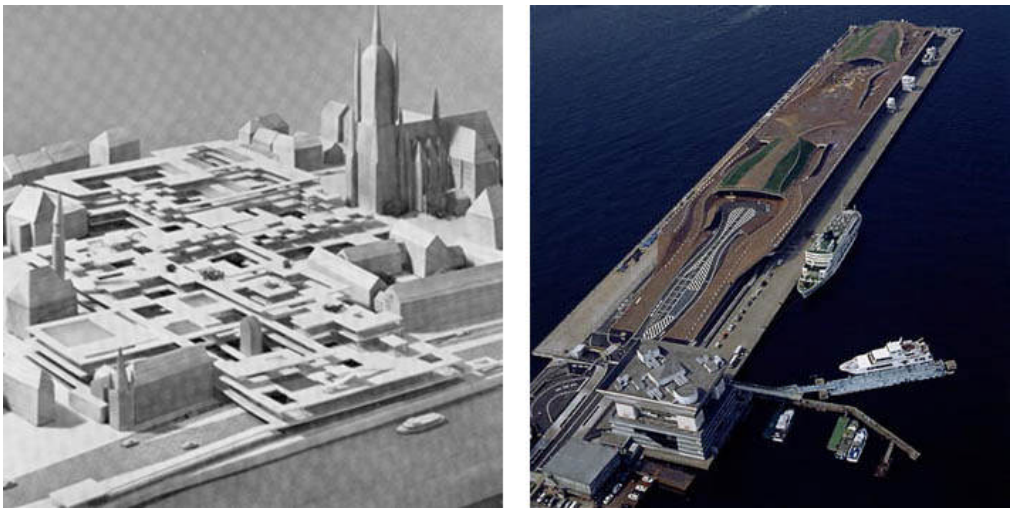


Figure 6.1 From left to right: Frankfurt-Römerberg Competition Project by Candilis, Josic and Woods; Yokohama Port Terminal by FOA. (Source: Jurgen Joedicke, Candilis, Josic, Woods, Stuttgart, Karl Kramer Verlag, 1968, p. 205)

In her 1974 essay, "How to Recognize and Read Mat-Building," Alison Smithson explained Team 10 members' design approach in brief and gave different examples of their architectural projects. After decades, Hyde in his essay, "How to construct an Architectural Genealogy" introduces new contemporary examples to illustrate "mat-building," such as Nexus World (1991) by OMA (Office for Metropolitan Architecture), Yokohama Port Terminal (1994) by FOA (Foreign Office Architects) (Figure 6.1), Beirut Souks Projects (1995) by Stan Allen.[236]

It should be pointed out that Alison Smithson would not deem some of the examples in Hyde's essay as examples of "mat-building," such as Yokohama Port Terminal by FOA (Figure 6.1) and CCA Design of Cities Competition by Reiser and Umemoto (Figure 6.2). According to Team 10 members, a pattern of association means well-designed relationships between the parts and the whole, in other words, an organization of multiple units in a harmonious relationship. It is this relationship that designates formal characteristics of a project. In their projects, reciprocal relation and

[236] Timothy Hyde, "How to Construct an Architectural Genealogy, Mat-Building…Mat-Buildings…Matted-Buildings," 2001, pp. 104-117.

interaction between parts and whole can be easily perceived. However, in FOA's Yokohama Port Terminal Project, the relation between parts and whole cannot be observed. In other words, in this project, it is difficult to pinpoint visually identifiable units. At this point, it can be said that the formal characteristics of mat-building are extended by means of developing construction and material technologies. Therefore, there is an increase in the variety of mat-building examples. In his genealogy, Hyde points out other possible examples of mat-building that indicates a shift in the concept of mat-building.

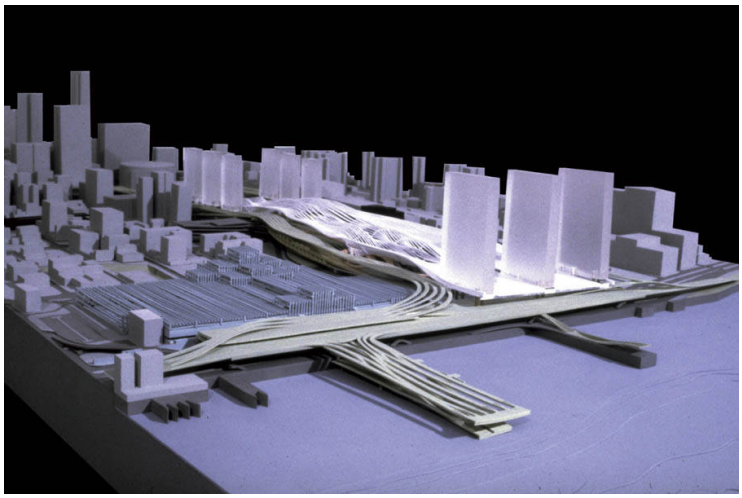


Figure 6.2 CCA Design of Cities Competition by Reiser and Umemoto**.** (Source: Reiser + Umemoto, "CCA Design of Cities Competition": [Internet, WWW] ADDRESS: http://www. reiser-umemoto.com [Accessed: 10 April 2005])

In Frankfurt-Römerberg Competition Project, the horizontal unifying roof is a result of parts and whole relation. Foreign Office Architects consider horizontally weaved surface (that is a roof) as a unifying element of whole complex. Yokohama Port Terminal is a topologic structure, and an artificial landscape that organizes pedestrian and vehicular movement, and proper places for human association. In this terminal project, the unifying roof, which is a warped and folded surface, is a significant

solution for the architectural organization. It brings together distinct programmatic elements in a unity. Then, it might be said that tools for achieving *association* have been developed.

Although the architectural approach underlying Yokohama Port Terminal and CCA Design of Cities is different from Team 10 members' approach, they are still horizontal architectural organizations, and a spatial matrix of relations is still the most significant consideration. In his introductory essay, Sarkis emphasizes Alison Smithson's observation that "the concept of mat-building is still developing." Departing from this point, Sarkis remarks that "what she justified in the 1970s as a natural condition of the 'first primitive state' of mats has become a defining feature."[237] Contemporary architects are developing and enlarging the scope of mat-building design strategies by means of new production techniques. They reinterpret the concepts from the past (e.g. mat-building) by assigning new meanings to them.

Knowledge of architectural design is "still developing." Allen points out that "[a]rchitects learn from the past, not by imitating or repeating, but by extending and developing propositions made by other like-minded practitioners." Knowledge of architectural design continues to develop because of the developments in construction and material technologies.

As Smithsons state, the aim of the architects is to develop coherent and comprehensible organizations. In order to achieve comprehensible organizations, architects use different design strategies and techniques, but the main idea is still valuable and relevant; organizing effective human relations or association.

[237] Hasim Sarkis, "Introduction," in Hasim Sarkis, ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*, (New York: Prestel Verlag, 2001): 14.

BIBLIOGRAPHY

Agrest, Diana. "Design versus Non-Design," *Architecture Theory Since 1968*, K. Michael Hays. Ed. Massachusetts MA: The M.I.T. Press, 1998.

Agrest, Diana I., *Architecture From Without*. Massachusetts: The M.I.T. Press, 1993

Allen, Stan. *Points and Lines: Diagrams and projects for The City*. New York: Princeton Architectural Press. 1999

Allen, Stan. "From Object to Field," Architectural Design 67 no 5/6 (may/June 1997): 24-31.

Allen, Stan. 2002. "Logistical Activities Zone," *Prototypo* [Internet, WWW].ADDRESS: http://www.prototypo.com/Essays/Essays2/002_2.htm [Accessed: 05 Jan 2005]

Allen, Stan. "Mat Urbanism: The Thick 2-D," Hasim Sarkis., Ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*. New York: Prestel Verlag, 2001: 118-126.

Architecture Theory Since 1968, an anthology edited by K. Michael Hays. (Massachusetts MA: The M.I.T. Press, 1998)

Asher, François. "Mobility," *Quaderens* 218. (1997): 50.

Baird, George. "Free University, Berlin." *AA Files* 40. (Winter 1999): 66-71.

Bakema, Jacob. "New Architecture and the next step." *Forum*. 1947.

Banham, Reyner. *The new Brutalism, Ethic or Aesthetic?*. New York: Reinhold Publishing, 1966.

"Berlin Free University," *Architectural Design*, vol: 44, no: 1, 1974, 14-17.

Bullivant, Lucy. "The Street," Ally Ireson and Nick Barley. Eds. *City Levels.* London, Birkhauser, 2000: 73.

Candilis, Josic, Woods. "Berlin Free University." *Architectural Design* 44. no.1. (1974): 14-17.

Casciato, Maristella. "'Forum': architecture and culture in the early 1960s."*Casabella*, 606. (1993): 48-53.

Chasin, Noah. Ethics and Aesthetics: New Brutalism, Team 10, and Architectural Change in the 1950s, Doctoral Thesis submitted to the Graduate Faculty of Art History, The City University of New York. 2002.

Colquhoun, Alan. *Modern Architecture*. Oxford: Oxford University Press. 2002.

Curtis, William J.R. *Modern Architecture since 1900*. London: Phaidon Press. 1996.

"Eastern Bipolar Hyperconnected City," *El Croquis* 115, 2003, pp.58-65

Ellin, Nan. "Global Cities." *Lotus* 110. (September 2001): 65-70.

Frampton, Kenneth. *Modern Architecture: A Critical History*. Newyork and Toronto: Oxford University Press. 1980.

Günay, Baykan, "History of CIAM and Team 10." Journal of the Faculty of Architecture 8. (1988): 23-44.

Goldhagen, Sarah Williams and Rejean Legaul, eds. *Anxious Modernisms*. Cambridge, The MIT Press. 2000

Hays, K. Michael. "Points of Influence and Lines of Development." In Stan Allen. *Points and Lines: Diagrams and projects for The City*. New York: Princeton Architectural Press. 1999.

Heuvel, Dirk van den. “The diagrams of Team 10.” *Daidalos* 74. (2000): 40-51.

Heuvel, Dirk van den. “Generative Dynamics,” *L’Architecture D’Aujourd’hui* 344 (January-February 2003): 33.

Heynen, Hilde. Book Review of “The CIAM Discourse on Urbanism, 1928-1960” by Eric Mumford, *The Journal of Architecture* 7. 2002.

Houben, Francine and Luisa Maria Calabrese, eds. *Mobility: A Room with a View*.Rotterdam: Nai. 2003

Hughes, Jonathan and Simon Sadler, eds. *Non-Plan, Essays on Freedom, Participation and Change in Modern Architecture and Urbanism*. Oxford: Architectural Press. 2000.

Hyde, Timothy. “How to Construct an Architectural Genealogy, Mat-Building…Mat-Buildings…Matted-Buildings,” Hasim Sarkis Ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*. New York: Prestel Verlag, 2001: 104-117.

Ireson, Ally. “Introduction,” *City Levels.* Ally Ireson and Nick Barley. Ed. London, Birkhauser. 2000.

Jaschke, Karin. “Architecture as Artifice.” *Journal of Architecture*, 6 (Summer 2001): 135.

Jencks, Charles. *Modern Movements in Architecture*. Britain: Penguin Group, 1973.

Joedicke, Jurgen. *Candilis, Josic, Woods*. Stuttgart, Karl Kramer Verlag, 1968.

Jonston, Pamela. Ed. *Examlary Project 3*. London: Architectural Association. 1999.

Kurukava, Kisho. 2002. “Rıkyu Grey and the Art of Ambiguity” in *Phylosophy of Symbiosis*. [Internet, WWW].ADDRESS: http://www.kisho.co.jp/Books/book/chapter6.html [Accessed: 20 Dec 2004]

Lefaivre, Liane. “Rebel With a Cause: Dutch Architect Aldo van Eyck restored humanist values to modernist practice,” *Architecture* 88 no.9. (1999): 81-83.

Leong, Sze Tsung and Ghuihua Judy Chung. Eds. *The Charged Void: Architecture, Alison and Peter Smithson*. New York: The Monacelli Press, 2001.

Leong, Sze Tsung and Ghuihua Judy Chung. Eds. *The Charged Void: Urbanism, Alison and Peter Smithson*. New York: The Monacelli Press, 2005.

Lewis, John eds. *Urban Structuring: Studies of Alison and Peter Smithson*. London: Studio Vista. 1967.

"Mediterranean Hospital for The Generation Zero*," El Croquis* 114, 2003, p.96.

Mumford, Eric. *The CIAM Discourse on Urbanism, 1928-1960*. Cambridge, The MIT Press. 2000.

Mumford, Eric. "From CIAM to Collage City: Postwar European Urban Design and American Urban Design Education." In *Urban Design: Practices, Pedagogies, Premises*. [Internet, WWW].ADDRESS: http://www.arch.columbia.edu/gsap-online/files. html [Accessed: 20 Dec 2004]

Mumford, Eric. "The Emergence of Mat or Field Buildings." Hasim Sarkis. Ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*. New York: Prestel Verlag, 2001: 48-65.

Ockman, Joan. *Architecture Culture 1943-1968, a Documentary Anthology*. New York: Rizzoli International Publications, 1993.

Oxman, Robert, Hadas Shadar and Ehud Belferman. "Casbah: a brief history of a design concept," *Architectural Research Quarterly* 6 no. 4. (2002):321-336.

Pasquarelli, Gregg. "Architecture Beyond Form." Bernard Tschumi and Irene Cheng Eds. *The State of Architecture at the Beginning of the 21st Century*. New York: The Monacelli Press, 2003: 24.

Pedret, Annie. "Representing History or Describing Historical Reality?: The Universal and the Individual in the 1950s" Internetional Conference on the Research of Modern Architecture, *Universal versus Individual*, (Jyväskylä, Finland: 30 Aug. - 1 Sep. 2002): [Internet, WWW] ADDRESS: http://www.alvaraalto.fi/conferences/universal/finalpapers/anniepedret.htm [Accessed: 20 Dec 2004]

Robbins, Edward ed. *Shaping the City*. New York: Routledge, 2004.

Sadler, Simon. *The Situationist City*. Massachusetts: MIT Press. 1998.

Sadler, Simon. "An Avant-Garde Academy," Andrew Ballantyne. Ed. *Architectures: Modernism and After*. Malden, MA: Blackwell, 2004.

Sarkis, Hasim. "The Paradoxical Promise of Flexibility." Hasim Sarkis. Ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*. New York: Prestel Verlag, 2001: 81-89.

Sarkis, Hasim. "Introduction." Hasim Sarkis. Ed. *Case: Le Corbusier Venice Hospital and the Mat Building Revival*. New York: Prestel Verlag, 2001: 13-17.

Sert, J. Luis. *Can Our Cities Survive.* Cambridge, The Harvard University Press. 1942.
Schiedhelm, Manfred. "The Berlin Free University Experience." Pamela Jonston Ed. *Architectural Association:Examplary Projects 3.* London: Architectural Association, 1999: 97.

Smithson, Alison and Peter. *Ordinariness and Light*. Massachusetts: The M.I.T. Press, 1970.

Smithson, Alison. Ed. *Team 10 Primer.* Massachusetts: The M.I.T. Press, 1960.

Smithson, Alison. Ed. *Team 10 Meetings 1953-1984*. New York: Rizolli, 1991.

Smithson, Alison. "How to recognize and read Mat-Building," *Architectural Design* 44 no.9. (September 1974): 573-590.

Smithson, Alison. "The Work of Team 10," *Architectural Design* 34 no.8. (August 1964): 373-393.

Smithson, Alison. "The Work of Team 10," *Architectural Design* 30. (1960): 179-190.

Strauven, Francis. "The Dutch contribution: Bakema and Van Eyck", *Rossegna* 14 no.52. (December 1992): 48-57.

Taylor, Brian Brice. "Team 10 + 20," *Architecture D'Aujourd'Hui* 177. (1975): 1-66.

Trelcat, Sophie. “Crossed Thoughts on Contemporary City,” *L’Architecture D’Aujourd’hui*, 344. (2003): 46-54.

Tschumi, Bernard. “Organization + Bodies.” Bernard Tschumi and Irene Cheng, Eds. *The State of Architecture at the Beginning of the 21st Century*. New York: The Monacelli Press, 2003: 24.

Tschumi, Bernard. “Le Fresnoy, Center for Contemporary Arts,” *Quaderens* 218. (1997): 30.

Tzonis, Alexander and Liane Lefaivre, “Beyond Monuments, Beyond Zip-a-tone. Into Space/Time,” Pamela Jonston. Ed. *Examplary Projects 3*. London: Architectural Association, 1999: 118-141.

Vidler, Anthony. “Toward a Theory of the Architectural Program,” *October* 106.(Fall 2003): 59-75.

Violeau, Jean-Louis. “A Critique of Architecture: The Bitter Victory of the Situationist International.” Sarah Williams Goldhagen and Rejean Legaul. Eds. *Anxious Modernisms*. Cambridge, The MIT Press, 2000: 246.

Wagenaar, Cornelis. “Jaab Bakema and the Fight for Freedom.” Sarah Williams Goldhagen and Rejean Legaul. Eds. *Anxious Modernisms.* Cambridge, The MIT Press, 2000.

Webster, Helena. Ed. *Modernism without Rhetoric; Essays on the work of Alison and Peter Smithson*. London: Academy Edition, 1997.

Wigley, Mark, “Network Fever,” *Grey Room* 04. (2001): 82-122.

Woods, Shadrach. “Web,” *Le Carrer Bleu* 3. 1962.

Woods, Shadrach. *The Man in the Street*. Harmondsworth, 1975.

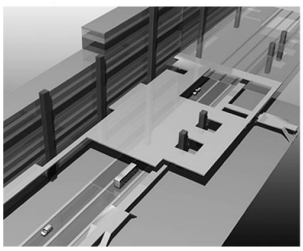
Yamamoto, Riken. “Saitama Prefecture University,” *Lotus* 111, 2001, p.74.

Yamamoto, Riken. “Saitama Prefectural University of Nursing and Welfare, Japan”: [Internet, WWW] ADDRESS: http://home.kimo.com.tw/jcshih2000/precedent1.htm [Accessed: 2 April 2005]

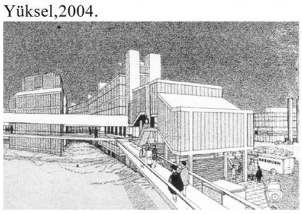
APPENDIX

PROJECTS OF TEAM 10 AND CONTEMPORARY EXAMPLES

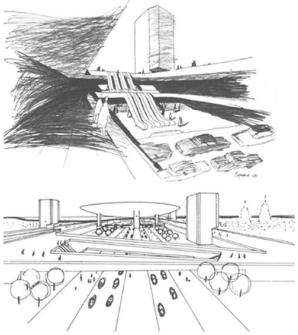
Golden Lane Project by Smithsons (1952).
Yüksel, 2004.



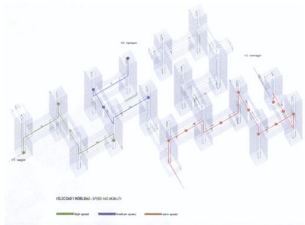
Tel Aviv-YAFO Central Area Project
by Bakema and Van den Broek (1964).
Yüksel,2004.

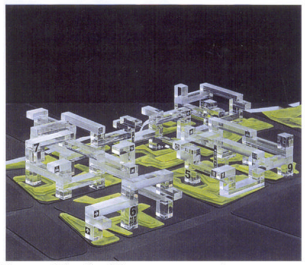


Sheffield University Project
by Smithsons (1953).
(Leong and Chung, 2001, p.110)

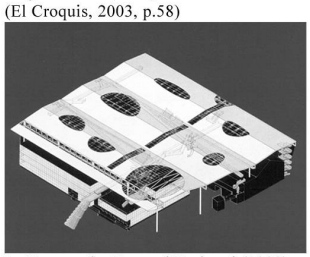


Hauptstadt Project for Berlin
by Smithsons (1958).
(Lewis, 1967, p.52)

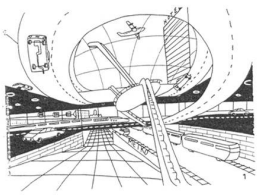


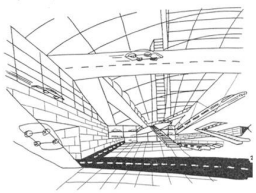


Easter Bipolar Hyperconnected
City by Victoria Acebo and
Angel Alonso (2003).
(El Croquis, 2003, p.58)



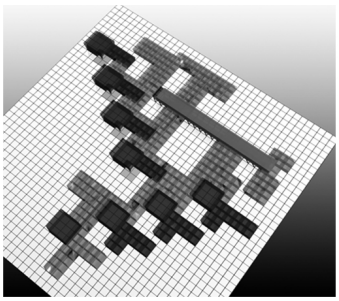
Le Fresnoy by Bernard Tschumi (1993).
(Quaderens, 1997, p.34)



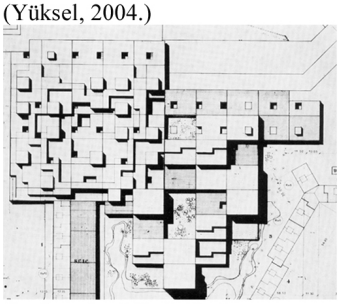


Eurolille Project
by Rem Koolhaas (1989).
(Trelcat, 2003, p.49)

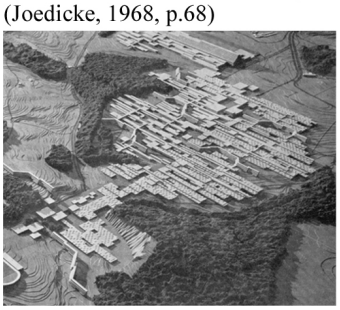
Figure A.1 Mobility and Flexibility



Amsterdam Orphanage Project
by van Eyck (1955).
(Yüksel, 2004.)

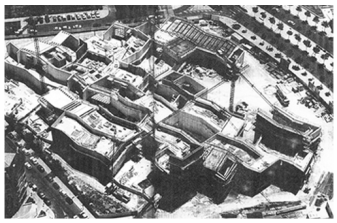


Toulous-Le Mirail Project
by Candilis, Josic and Woods (1961).
(Joedicke, 1968, p.68)

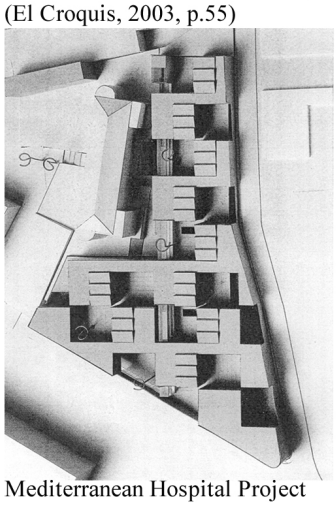


Bochum University Project
by Candilis, Josic and Woods (1962).
(Joedicke, 1968, p.102)

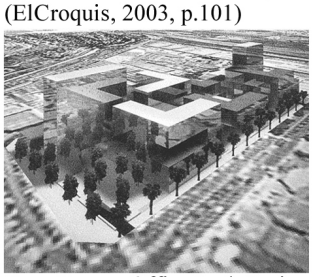
Hauptstadt Proposal for Berlin
by Smithsons (1958).
(Lewis, 1967, p.56)



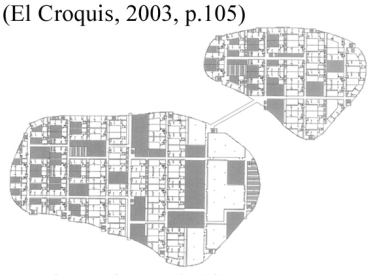
Modern Atr Museum (Musac in Leon)
by Mansilla+Tunon Architects (2001).
(El Croquis, 2003, p.55)



Mediterranean Hospital Project
by NJIRC Architects (2003).
(ElCroquis, 2003, p.101)

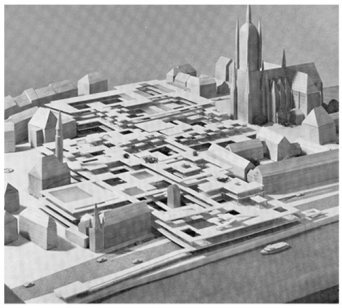


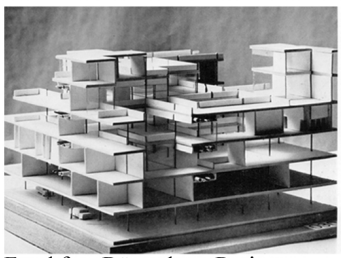
Zona Franca Office Park Project
by Foreign Office Architects (2002).
(El Croquis, 2003, p.105)



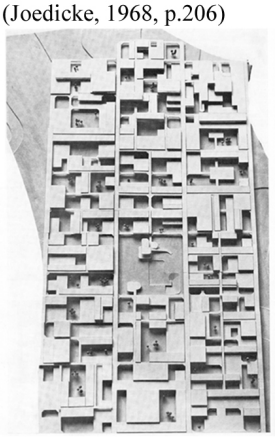
Housing Paju Book City
by Young Joon Kim (2002).
(Lotus 117, 2003, p.43)

Figure A.2 Repetition and Variation

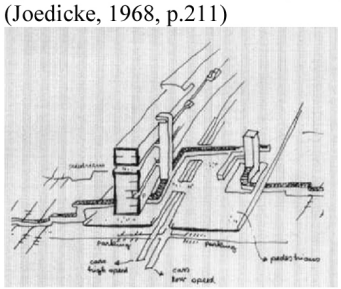




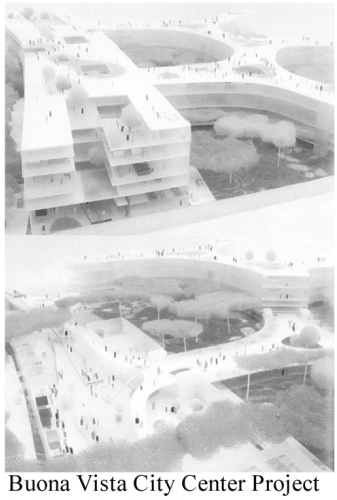
Frankfurt-Römerberg Project
by Candilis, Josic and Wods (1963).
(Joedicke, 1968, p.206)



Berlin Free University Project
by Candilis, Josic and Wods (1964).
(Joedicke, 1968, p.211)



Tel Aviv-YAFO Central Area Project
by Candilis, Cosic and Woods (1964).
(Architectural Design,1964, p.374)



Buona Vista City Center Project
by Toyo Ito (2001).
(Architecture+Urbanism 404, 2004, p.90)

Saitama Prefecture University Project
by Riken Yamamoto (1995).
(Lotus 111, 2001, p.79)

Figure A.3 Spatial Matrix of Relation