MAKING OF THE CITY: UNCOVERING THE *PLAN GAME*

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

BY

CANSU TÜRK

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

JULY 2021

Approval of the thesis:

MAKING OF THE CITY: UNCOVERING THE *PLAN GAME*

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ABSTRACT

MAKING OF THE CITY: UNCOVERING THE *PLAN GAME*

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Master of Architecture, Architecture
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July 2021, 139 pages

Throughout the design process of a built environment, considering architecture and urban design separately and not associating them spatially cause the fundamental obstacle in integrating these fields. The thesis seeks to analyze the possibility of an alternative approach towards making of the city by emphasizing the spatial and typological features of architecture and focusing on the relation between the urban spaces and architecture. Besides, it highlights the value of benefiting from architectural precedents in the design process. In this regard, *Plan Game* invented by Colin Rowe, Bernhard Hoesli, Robert Slutzky, and John Hejduk in the 1950s in Texas University could offer such an alternative position, which has been studied limitedly yet in the field of architecture. *Plan Game* emphasizes the integration of spatial and typological qualities of architecture with the urban design process. By analyzing the techniques and content of the drawing, its actors, its context, and its pedagogical dimension, this thesis uncovers the *Plan Game* and discusses the possible contribution of this approach to urban and architectural researches. The thesis also analyzes three in-class exercises referencing *Plan Game* as a pedagogical reflection of this creative recombination approach: the studio assignment of Bernhard Hoesli at ETH Zurich, the *Exquisite Conurbation* exercise that Mark

Morris continued for a semester at Cornell University, and the *City of Composite Presence* produced by two graduate students at Cornell University. Within the scope of the thesis, *Plan Game Workshop Series* was organized with the participation of faculty members, practicing architects, and graduate students to carry this valuable exercise to the contemporary discussion and observe diverse approaches towards the interaction between the architecture and urban spaces. Hence, the thesis discusses diverse aspects of *Plan Game* to uncover underlying ideas of the drawing and track the possible integration of this fictitious exercise to the architectural design studios as a pedagogical tool.

Keywords: *Plan Game*, architectural precedent, urban design, creative recombination, collage

ÖZ

KENT OLUŞUMU: *PLAN GAME*'İN DEŞİFRESİ

Türk, Cansu
Yüksek Lisans, Mimarlık
Tez Yöneticisi: Dr. Öğretim Üyesi Esin Kömez Dağlıoğlu

Temmuz 2021, 139 sayfa

Yapılı çevrenin tasarım sürecinde mimari ve kentsel tasarımın ayrı ayrı ele alınması ve mekânsal olarak ilişkilendirilmemesi, bu alanların bütünleştirilmesinde temel bir engel oluşturmaktadır. Bu tez, mimarlığın mekânsal ve tipolojik özelliklerini vurgulayarak ve kent ile mimari arasındaki ilişkiye odaklanarak, alternatif bir kent oluşturma yöntemini incelemeyi amaçlamaktadır. Ayrıca tasarım sürecinde mimari emsallerden yararlanmanın önemini vurgulamaktadır. Bu bağlamda, mimarlık disiplininde şimdiye kadar derinlemesine çalışılmamış olan ve 1950'lerde Teksas Üniversitesi'nde Colin Rowe, Bernhard Hoesli, Robert Slutzky ve John Hejduk öncülüğünde oluşturulan *Plan Game*, mimarlık ve kentsel mekân arasındaki ilişkiye alternatif bir yaklaşım sunabileceği öngörülmektedir. *Plan Game*, mekânsal ve tipolojik niteliklerin tasarım süreciyle bütünleşmesini vurgulamaktadır. Bu tez, *Plan Game*'i analiz etmekte, bu yaklaşımın çizim tekniklerini, içeriğini, aktörlerini, bağlamını ve *Plan Game*'in pedagojik boyutunu da ele alarak, kentsel ve mimari araştırmalara olası katkısını tartışmaktadır. Tez aynı zamanda *Plan Game*'e referans alınarak yürütülen üç sınıf içi alıştırmayı, yaratıcı birleştirme yaklaşımının pedagojik yansıması olarak incelemektedir: Bernhard Hoesli'nin ETH Zurich'de yürüttüğü stüdyo çalışması, Mark Morris'in Cornell Üniversitesi'nde bir dönem boyunca

sürdürdüğü *Exquisite Conurbation* alıştırması ve Cornell Üniversitesi'nde iki lisansüstü öğrenci tarafından üretilen *City of Composite Presence*. Tez kapsamında ayrıca, bu değerli tartışmayı çağdaş tartışmaya taşımak ve mimarlık ile kentsel mekânlar arasındaki etkileşime yönelik farklı yaklaşımları gözlemlemek için; öğretim üyelerinin, uygulamacı mimarların ve lisansüstü öğrencilerinin katılımıyla gerçekleştirilen *Plan Game Atölye Serisi* düzenlenmiştir. Dolayısıyla, tez çalışması çizimin altında yatan fikirleri ortaya çıkarmak ve bu kurgusal alıştırmanın pedagojik bir araç olarak mimari tasarım stüdyolarına olası etkisini gözlemlemek için *Plan Game*'i çeşitli yönlerini tartışmaktadır.

Anahtar Kelimeler: *Plan Game*, mimari öncü, kentsel tasarım, yaratıcı birleştirme, kolaj

To my father

ACKNOWLEDGMENTS

First and foremost I would like to express my deepest gratitude to my supervisor Assist. Prof. Dr. Esin Kömez Dağlıoğlu who has patiently supported this research with her incredible encouragement, guidance, criticism and motivating comments throughout the research process. Without her contribution, this study could not have been completed. Therefore, my appreciation to her can never be enough.

I would also like to thank the examining committee, Prof. Dr. Cânâ Bilsel and Assist. Prof. Dr. Heves Beşeli for their comprehensive discussions and inspiring comments for the thesis. I would also like to thank Prof. Dr. Berin Gür, Assist. Prof. Dr. Başak Uçar, and Matthew van der Ploeg for their invaluable comments and supports.

I express my deepest gratitude to all of the participants to the *Plan Game Workshop Series* including faculty members, practicing architects and graduate students due to their valuable contributions to the thesis. I am forever indebted to them.

I am also grateful to my colleagues Elif Ezgi Öztürk, Nehir Melis Uzun, Sena Çatal, Merve Nur Yurt, and Alâ Taleb for their moral and intellectual support. I would also like to express my thanks to Anıl Karzek who was witnessed each phase of this process and has always accompanied me with patience. A big appreciation goes to my support team: Süleyman İyigün, İhsan Tolga Korucu, Berk Başaran, Alp Çağatay Batuhan, Abdülkadir Şanlı, and Mehmet Can Akkaya for being always supportive to me, especially during the most challenging times.

Lastly, I would like to express my appreciation to all members of my family for their endless love, support and understanding, especially to my mother Güzide Türk and to my sister Pelin Türk. I am very lucky to have such a caring family.

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INTRODUCTION

> In dealing with contemporary urban planning, an architectural understanding of the city and its spaces is not treated as a matter of concern.[1]
>
> Sophie Wolfrum

Treating architecture as the background of the urban fabric is a quite common approach in the making of the city. Many approaches tend to reduce architecture into two dimensions by applying certain planning codes that cannot emphasize any information regarding spatial organization.[2] To represent architectural works and work on the city composition, using the figure-ground maps is another prevalent approach in urban design that depicts the buildings as solid masses and urban public spaces as voids. However, this technique separates architecture from city composition and does not illustrate a spatial continuity within the architectural component of the city. Therefore, the status of architecture in the drawing is underestimated due to this method by indicating only the footprint of the architectural plans. Michael Hebbert remarks the oversimplification aspect of figure-ground mapping technique as follows: "Figure-ground plans offer an extreme example of reductionism, omitting most levels of information typically mapped in built-up areas."[3] In other words, it limits the relationship between the built and unbuilt environment by illustrating only the footprints of the building masses.

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[1] Sophie Wolfrum, *The City as Architecture*, (Basel: Birkhäuser Press, 2019), 8.
[2] Matthew Carmona and John Punter, *The Design Dimension of Planning: Theory, Content, and Best Practice for Design Policies*, (London: E&FN Spon Press, 1997), 320.
[3] Michael Hebbert, "Figure-ground: History and Practice of a Planning Technique", *Town Planning Review*, Vol. 87, No. 6 (2016): 705.

Therefore, contemporary urban planning methods do not mainly dwell on the spatial characteristics of the architecture. Therefore, the thesis attempts to reconsider the relationship between the spatial characteristics of architecture and urban fabric in making of the city.

Conventional approaches towards masterplans are another aspect to consider. These approaches include specific strict rules which restrict the design process of the city and result in the production of limited design solutions. To this end, some architects and design theorists criticize this position, including Cristopher Alexander: "In practice master plans fail – because they create totalitarian order, they are too rigid; they cannot adapt to the natural and unpredictable changes..."[4] Besides, total design, which can be defined as designing and controlling everything as a whole, is a prevalent and conventional approach in city planning, especially in modernist urban planning.[5] Thus, modernist city design approaches are criticized heavily due to accepting the total design concept as an objective.[6] One of those architects is Colin Rowe and his colleague Fred Koetter who believe that the totalitarian approach does not work in city-scale projects. Instead of total design, they defend the significance of fragmentation and overlapping ideas in the design process.[7] Rather than designing the city as a whole in reference to the totalitarian approach, they suggest investigating the potentials of fragments in the design process.[8] Rowe and Koetter's thought about designing the whole through fragments is valuable to obtain diversity in the city composition, which corresponds highly with the objectives of this research.

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[4] Christopher Alexander, *The Oregon Experiment*, (Oxford: Oxford University Press, 1975), 18.
[5] Lebbeus Woods, "Total Design", last accessed December 28, 2019, https://lebbeuswoods.wordpress.com/2009/06/13/total-design/.
[6] Nikos Salingaros, "The Future of Cities: The Absurdity of Modernism", interview with Leon Krier, Planetizen, 05.11.2001, last accessed June 2, 2019, https://www.planetizen.com/node/32.
[7] Colin Rowe and Fred Koetter, *Collage City*, (Cambridge: The MIT Press, 1984), 149.
[8] Mark Dorrian and Frederic Pousin, *Seeing from Above: The Aerial View in Visual Culture*, (London: I. B. Tauris Press, 2013), 200.

Designing without diversities, total design problems, and the limited relationship between the figure of architecture and the ground of the city are some of the negative results of the conventional planning approaches because of the design restrictions. Conventional approaches in physical city planning, which cause monotonous and ordinary end-products, restrict new and diverse viewpoints even in the design process. Instead of conventional and totalitarian design proposals, perceiving the design field as full of unpredictable relations is crucial to obtain creative approaches in the city because cities need diversities that enrich the character of the design field and the citizens' experiences. Therefore, pushing the limits of conventional city design approaches is necessary to reinterpret the design process. In this respect, the potentials of the making of the city should not be restricted from providing the emergence of new spatial relations by performing conventional methods in the design process. City and architecture should not be differentiated from each other. For this purpose, from the beginning of the planning phase engaging architecture with urban spaces of the city is crucial. Also, most of the contemporary city planning approaches give very limited references to spatial characteristics of the city by focusing mainly on the overall organization of the field.[9]

The thesis aims to introduce a new position to engage architecture with urban fabric in making of the city by uncovering all the aspects of *Plan Game* which is a fictitious exercise invented and played by the faculty members of Texas University School of Architecture, who are latterly called as Texas Rangers, in 1950s. The creative concepts that will come out of this exercise, not *Plan Game* itself, can be used as a design tool in making of the city processes due to having infinite potentials. Additionally, because of presenting alternative design proposals and freedom of action, the exercise itself can be put into practice in the design studios as an educational tool to go beyond the limitations of conventional thinking.

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[9] Pier Vittorio Aureli, *The Possibility of an Absolute Architecture*, (Cambridge, MA: The MIT Press, 2011), 109.

The research also focuses on the archetypes and precedents in *Plan Game* in order to observe how they are used as a design tool to emphasize diverse spatial organizations and compose a city composition. In this sense, it is also essential to clarify the differences between the architectural terms of archetype, typology, and precedent to follow the discussion of the research. The origin of the term archetype, which is the combination of the words "arkhe" and "tupos", comes from the Ancient Greek meaning "first form or prototype".[10] Also, Aldo Rossi introduces an open-ended definition for archetype which reflects its generative process: "No types can be identified with only one form, even if all architectural forms are reducible to the types."[11] Therefore, the archetype does not consist of only one single form, and it gives clues about potential variations. Typology is a formal means of an architectural classification system of the archetypes based on similarities in their functions and/or forms.[12] Besides its classification aspect, typology is used to derive new formal organizations due to its generative feature for a long while, starting from Quatremere de Quincy to Giulio Carlo Argan, Aldo Rossi, and Peter Eisenman.

In the 19th and early 20th centuries, typology was accepted as an effective term in design practice to produce new knowledge rather than repeating the existing typology; however, in the 1950s, the term lost its architectural significance and was perceived as fixed historical examples. It regains importance in the late 1960s due to Aldo Rossi's typological approach that Rossi indicates in his book: *The Architecture of the City*.[13] Rossi objects to the evaluation of typology as a fixed historical answer to the design problems and propounds typology as an essential element in architecture literature. Architectural precedent can be defined as a pre-existing work of other architects in a similar circumstance that provides a design vocabulary for

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[10] Nicolaas A. Rupke, "Richard Owen's Vertebrate Archetype", *The University of Chicago Press Journal*, Vol. 84, No. 2 (1993): 231.
[11] Aldo Rossi, *The Architecture of the City*, trans. Diane Ghirardo and Joan Ockman, (Cambridge: The MIT Press, 1984), 41.
[12] Sam Jacoby, "Type Versus Typology", *The Journal of Architecture*, Vol. 20, (2015): 931.
[13] Bernard Leupen, "Typology and Morphology" in *Design and Analysis*, (Rotterdam: Van Nostrand Reinhold Press, 1997), 138.

other architects.[14] The analysis of precedents provides a chance to recognize the invisible spatial relations between different architectural works. Hence, architectural precedent can be regarded as an essential design tool that instrumentally leads the design processes.

Besides, it is crucial to note that the periods in which *Plan Game* and other pedagogical reflections of this exercise were produced are not coincidental. *Plan Game* has been played about twenty-five years before the publication of *Collage City*, in which Colin Rowe and Fred Koetter reflect their opinions about the ideal city and explicitly criticize the modernist planning approaches.[15] They attack the modernist approach due to accepting the city as a tabula rasa and locating the freestanding buildings to public spaces without any contextual reference. Hence, the attempts to strengthen the relation between architecture and the city experienced in *Plan Game* can be distinguished from the underlying content of *Collage City*. Rather than treating architecture and urban design as two separate fields, the importance of discussing the architecture with its context is a prominent issue that Rowe and Koetter have worked on in this book. Therefore, *Plan Game* may be accepted as an important exercise that triggered the writing process of *Collage City* and formed a basis for it.

Similarly, in-class exercise given by Bernhard Hoesli in the 1983-84 academic period and the English translation of Aldo Rossi's book: *The Architecture of the City* published in 1982 coincide with the same period. In the book, Rossi revisits the term of the urban artifact to define the city through monuments, precedents, urban spaces, geographical features, and locus.[16] Hence, Rossi emphasizes the collective memory as well as the importance of archetype and its relation with the place, which have an

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[14] Roger H. Clark, Michael Pause, *Precedents in Architecture: Analytic Diagrams, Formative Ideas, and Partis*, (New Jersey: John Wiley & Sons Inc., 2012), viii.
[15] Colin Rowe and Fred Koetter, "Crises of the Object: Predicament of Texture" in *Collage City*, (Cambridge: The MIT Press, 1984), 55-72.
[16] Aldo Rossi, "Urban Artifacts and a Theory of the City" in *The Architecture of the City*, trans. Diane Ghirardo and Joan Ockman, (New York: The MIT Press, 1982), 20.

enormous impact on the definition of the city.[17] After the publication of this book, the discussions concerning the archetype again came into prominence in the 1980s.[18] Besides, *Green Archipelago*, which is a prominent manifesto towards the urban design theory worked through by Oswald Mathias Ungers and his colleagues from Cornell University in 1977, focuses on the assemblage of fragments that are not totally disconnected from each other and the notion of "cities within the city".[19] Thus, *Green Archipelago* may have influenced Hoesli to integrate *Plan Game* back in the 1983-84 academic period in the design curriculum. Therefore, giving this exercise may have been a conscious and ideological decision of Hoesli probably to revive the typological discussion and the assemblage of heterogeneities in academia and the design studios.

During the research process, many resources were examined for getting in-depth information about *Plan Game*. The original drawing of *Plan Game* was obtained from Alexander Caragonne's book: *The Texas Rangers: Notes from an Architectural Underground*. The archives of The Texas Rangers' members were attempted to be accessed. In this respect, Bernhard Hoesli's archive in the gta Archives at ETH Zurich and John Hejduk's archive at the CCA in Montreal were searched digitally.[20] The documents related to Bernhard Hoesli's in-class exercise at ETH Zurich were found during the archive research at the gta Archives. Other academic resources were also searched in detail.

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[17] Rossi, *The Architecture of the City*, 8.
[18] Diane Ghirardo, "Aldo Rossi in the United States: A Meditation on Artifacts Over Time", ACSA International Conference 1999, Annual Conference Proceedings, last accessed July 20, 2021. https://www.acsa-arch.org/proceedings/International%20Proceedings/ACSA.Intl.1999/ACSA.Intl.1999.1.pdf.
[19] Oswald Mathias Ungers, Rem Koolhaas, Peter Riemann, Hans Kollhoff, and Arthur Ovaska, *The City in the City: Berlin: A Green Archipelago*, (Oslo: Lars Müller Publishers, 2013), 3-8.
[20] Colin Rowe's archive was the missing part in the archival research process of this study. It was not possible to reach and analyze the documents in his archive since the whereabouts of the archive was not known after his death.

The written and visual documents of Mark Morris' assignment regarding *Plan Game* given at Cornell University were reached from the journal article: "All Night Long: The Architectural Jazz of the Texas Rangers" in *Drawing Architecture*. While digging in numerous books, articles, and web pages, one of the students, Justin Wadge, who took place in the *Exquisite Conurbation* exercise at Cornell University was reached out. Some questions were directed to Wadge to reveal the details of *Exquisite Conurbation's* design process. Hence, the thesis also includes the outcomes of this interview. Besides *City of Composite Presence* produced by two graduate students at Cornell University was found in the 1978 edition of *Collage City* written by Colin Rowe and Fred Koetter.

The research also uncovers the architectural fragments of *Plan Game* and *City of Composite Presence* drawings which have not been analyzed and presented in any academic publication. In the scope of the research, *Plan Game Workshop Series* was organized and held with the participation of faculty members, practicing architects, and graduate students, starting from 10th to 24th May 2021. The workshop aims to examine whether thinking based on archetypes and precedents is still a prevalent method in terms of architectural production or not. By reviving this game, it became possible to observe the reflection of the ideas behind *Plan Game* to the current architectural approaches.

To reveal the potential of *Plan Game*, the study first compares Nolli's and Piranesi's maps of Rome, Pianta di Roma, as a historical case study in Chapter 2 to examine diverse and radical stances in the representation of city composition in architectural history. The thesis asserts that the drawing technique and underlying thoughts of *Plan Game* is a hybrid version of Nolli Map and Piranesi's Pianta di Roma. Then, the plan of Campo Marzio is analyzed in which Piranesi improves his position by integrating the architecture of the city and urban spaces with each other. To do so, it mentions a brief overview of the influence of Ligorio's imaginative aspect in Antiquae Urbis Imago to Piranesi's design approach. After these observations, the thesis states that *Plan Game* approximates the hybrid version of Nolli Map and

Piranesi's Pianta di Roma in terms of the representational technique and understanding the city, just like Campo Marzio.

In order to uncover *Plan Game,* the study gives general information about the game in Chapter 3, how it was invented, in which period it is played, and the spatial characteristic of architectural plans in the drawing and its relation with the making of the city approaches. It examines the actors of *Plan Game* and their backgrounds in diverse fields, the similarity between the actors' design approaches towards architectural education. Afterwards, it investigates the notion of creative recombination approach in *Plan Game* by emphasizing Colin Rowe's and Fred Koetter's crucial position of collaging the fragments. The thesis also discusses *Exquisite Corpse* exercise in design history, played with similar rules in *Plan Game,* to observe its creative aspect and the impact on architectural education. As well as its architectural and imaginative potentials, the study also includes the shortcomings of *Plan Game*. Detailed information on the architectural typologies and precedents in *Plan Game* has not been analyzed and presented in any academic publication as yet. Hence, the thesis reveals a detailed analysis of the architectural fragments taking place in *Plan Game.* As a research methodology, the plan drawings were tried to be decomposed by comparing them with the plans of the historical buildings and ancient city plans. This chapter ends with discussing the architectural precedent in relation to *Plan Game*; the importance of learning architecture through precedent, and its generative potential in the design processes.

In Chapter 4, *Plan Game* is reconsidered as a pedagogical method. The study analyses and compares pedagogical examples of *Plan Game* given in various design studios as a part of architectural education. It is crucial to note that the thoughts behind *Plan Game* may have enormous impacts on improving students' knowledge towards architectural precedents, experiencing the outstanding results of collective work, and learning how to approach architecture and public spaces together in the design process. To overview the pedagogical examples; Bernhard Hoesli's in-class exercise given at ETH Zurich is found during the archive researches at the gta Archives, Mark Morris' assignment given at Cornell University is reached from the

journal article, and *City of Composite Presence* produced by two graduate students at Cornell University is found in the 1978 edition of *Collage City*. These examples are analyzed in this chapter respectively.

In addition to the analysis of both *Plan Game* and its pedagogical examples, *Plan Game Workshop Series* was organized in three sessions within the master's thesis scope to observe how architects approach this exercise nowadays. Chapter 5 analyzes this process in detail; gives information about participants, uncovers the architectural precedents taking part in the drawings, compares the end-products to each other, and indicates the outcomes of this workshop. This chapter also outlines the objectives of organizing *Plan Game Workshop Series*. The purposes can be listed as: examining whether thinking based on architectural typologies and precedents still an effective method in terms of architectural production or not, observing how participants spatially integrate the plans of architectural works and public spaces, analyzing the geographical and periodic distribution of the architectural precedent, and contributing to the literature of architecture by reviving *Plan Game*. Besides, the analysis part of these drawings includes unexpected approaches in the production process of the workshop.

The thesis concludes in Chapter 6, which discusses the outcomes of this research and indicates general remarks and implications for future studies.[21]

[21] By benefitting from the subject covered in the thesis, the author received acceptance from one international and one national conferences together with her supervisor: *Histories of Urban Design: Global Trajectories and Local Realities*, organized by the gta Institute at ETH Zurich and *III. Symposium of Urban Form*, organized by Turkish Network of Urban Morphology.

CHAPTER 2

ON THE CANONICAL POSITIONS TOWARDS THE REPRESENTATION OF THE CITY AND ITS ARCHITECTURE

There are diverse approaches in the way that cities were represented in architectural history because, in the maps, artists reflect unique observations about the city and produce the maps based on how they perceive the city. Hence, Louis Marin, the eminent critic and theorist of representation indicates that each map refers to a different understanding; therefore, they illustrate and emphasize various features of the city.[22] As each discourse needs its own representational approach, they prefer to depict the city by giving different information by using various techniques. In this respect, two historical examples from the mid-18th century present two canonical approaches regarding the relationship between urban planning and architecture. One of them is Nolli's Pianta Grande di Roma which represents the built and unbuilt environment of the city by using the figure-ground mapping technique. The other example is Piranesi's Pianta di Roma which represents architecture by its spatial and typological characteristics and defines the city through architectural works by prioritizing them instead of the urban environment of the city.

2.1 Nolli's Pianta Grande di Roma

Giovanni Battista Nolli, who was an architect and experienced surveyor in the early 18th century, achieved an enormous effect on mapmaking history with his work of

[22] Louis Marin, "The City in Its Map and Portrait" in *On Representation*, trans. Catherine Porter, (Stanford: Stanford University Press, 2001), 205–212.

Pianta Grande di Roma.[23] Nolli map is accepted as the first precise, scientific mapping of the city of Rome. The final work is used as a base of many other urban planning projects, including the government planning of Rome till the 1970s, the architectural exhibition of Roma Interrotta, and many other cartographic studies.[24] Hence, the Nolli map is used as a starting point to enhance other urban design projects. For this project, Nolli started to survey the site in 1736 and completed his work at the end of 1748. In the surveying phase, Diego Ravillas, a prominent cartographer and antiquarian, supported the project with his archaeological knowledge.[25] Due to the invitation of Nolli, Piranesi participated in the early production processes of the map to produce illustrations of some Roman ruins to the margins of the work; and Piranesi also played a crucial role in the printing of the map at the end of the project together with Giuseppe Vasi.[26]

Nolli map is composed of 12 engraving copper plates because of the limitations of the period, and it could not be represented in one piece.[27] The length of the final map is 176 cm, the width is 208 cm long, and the city is represented on a scale of 1:3000.[28] Nolli map includes the north-south geographical convention for the first time and represents complete modern Rome by using the accurate dimensions excluding the speculations of the previous maps.[29] Therefore, the representation of the city as a

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[23] James Tice, "A Digital Extension of a Roman Cartographic Classic: The 1748 Nolli Map and its Legacy", *Journal of Eighteenth Century Art and Architecture* (2018), last accessed June 18, 2021, https://www.journal18.org/issue5/a-digital-extension-of-a-roman-cartographic-classic-the-1748-nolli-map-and-its-legacy/.

[24] Keti Lelo and Carlo Maria Travaglini, "The New Map of Rome by Giambattista Nolli: A Precise Representation of the Urban Space in the 18th Century", last accessed December 12, 2019, https://www.researchgate.net/publication/253411052_The_New_Map_of_Rome_by_Giambattista_Nolli_a_precise_representation_of_the_urban_space_in_the_18th_century.

[25] Pier Vittorio Aureli, *The Possibility of an Absolute Architecture*, (Cambridge, MA: The MIT Press, 2011), 106.

[26] Jacob Urban, "The Legacy of Images: Part 3, Giovanni Battista Piranesi", last accessed December 12, 2019, https://kochhazard.com/the-legacy-of-images-pt-3-giovanni-battista-piranesi/.

[27] Ian Verstegen, Allan Ceen, *Giambattista Nolli and Rome: Mapping the City Before and After Pianta Grande*, (Rome: Studium Urbis Press, 2014), 9.

[28] Tice, "A Digital Extension of a Roman Cartographic Classic: The 1748 Nolli Map and its Legacy".

[29] Aureli, *The Possibility of an Absolute Architecture*, 108-109.

whole is essential rather than the depiction of ancient ruins. As well as prominent monuments, churches, courtyards, and even minor buildings in the city, open spaces like fences, obelisks, and steps are also illustrated particularly in the Nolli map, not just significant architectural structures.[30] To do so, the Nolli map benefits from the figure-ground technique to differentiate architectural forms from urban spaces. The interiors of the churches and preeminent atriums of the palaces are mapped as "poché excavated within built mass".[31] Other buildings like residential structures are depicted only with their footprints by using linear hatches inside the contour lines, and the remaining parts are the urban spaces left in white. [Figure 2.1]

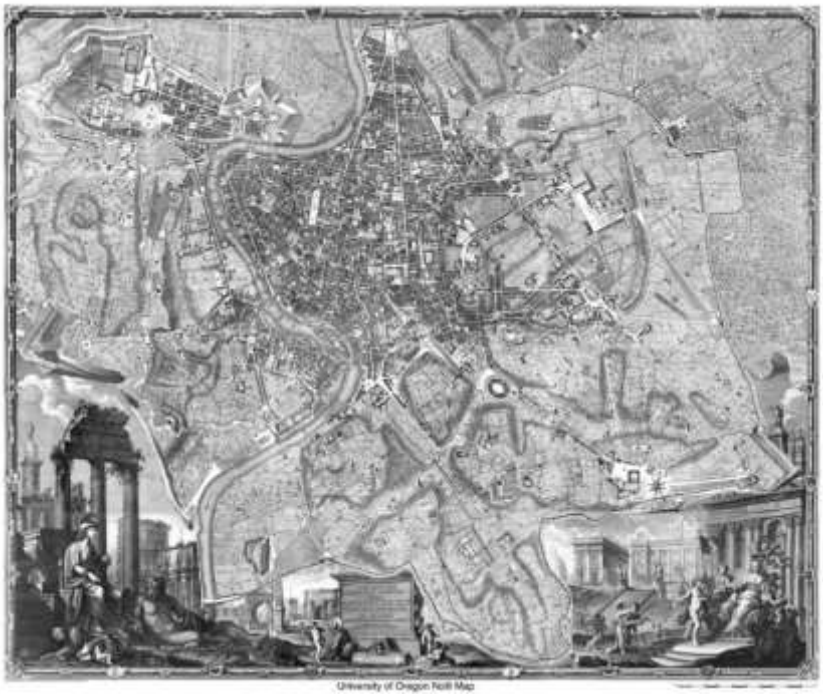

Figure 2.1 Pianta Grande di Roma. Produced by Giovanni Battista Nolli, 1748. Digitally remastered, 2005. Digitization by James Tice, Erik Steiner, Mark Brenneman. The digital Copyright University of Oregon. [University of Oregon Nolli Map Copyright 2006. Reprinted by permission of the University of Oregon Nolli Map Project. University of Oregon, last accessed May 10, 2021, http://nolli.uoregon.edu]

[30] Tice, "A Digital Extension of a Roman Cartographic Classic".

[31] This terminology is used in Aureli's book (*The Possibility of an Absolute Architecture*, p.108, p.109) to define the drawing characteristic of churches, atriums in the Nolli map in which the plans depict the interior organizations rather than just including building footprints.

This figure-ground technique in the Nolli map is mostly criticized as indicating the diversity between the private and public spaces of the city. However, this reading is an example of overgeneralization since some private and inaccessible courtyards, which do not have a public characteristic, are colored with white like having an urban public space feature.[32] Instead of this objective, by using the figure-ground method, the Nolli map aims to emphasize the figure of architecture and the ground of the city as two different components of Rome. Architectural theorist Pier Vittorio Aureli also remarks this shift in representation of the map as follows: "Nolli map for the first time attacked the equivalence and differentiated city and architecture."[33] Therefore, Nolli underlines precisely the diversity between the architectural forms and urban spaces in representing the city. Nolli emphasizes illustrating the overall organization of the city and scientific facts instead of architectural interpretations and various assertions towards the city of Rome.

In architecture, most of the maps have a tendency to reflect the architectural feature of the buildings in the foreground or at least emphasize the urban space and architecture of the city in a balanced way. However, the Nolli map focuses on representing street patterns and urban spaces of the city by illustrating the architectural works as negative spaces or leftovers. Hence, the footprints of buildings in the map cannot interact with the urban fabric and remain as a background of open spaces. Nolli specifically emphasizes the spatial organization of urban spaces in which the outer contour lines of the buildings were interpreted as borders to define the urban structure of the city. The figure-ground mapping used in the Nolli map causes this limited interaction between the architecture and urban tissue of the city.[34] Unfortunately, in the Nolli map, the existence of the architectural works is reflected as defining forms to mention the organization of urban morphology in Rome.

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[32] Even one of the references in this paper (*Giambattista Nolli and Rome: Mapping the City Before and After Pianta Grande,* p.81, p.219*),* analyzes the Nolli map illustrating public and private spaces.
[33] Aureli, *The Possibility of an Absolute Architecture*, 109.
[34] Verstegen and Ceen, *Giambattista Nolli and Rome: Mapping the City Before and After Pianta Grande*, 122.

Because of this approach, the Nolli map stands at a different point in terms of map formation and brings the urban spaces into the forefront.

In this respect, the notions of spatial continuity in the urban organization and experiencing the city from outdoor-public spaces play a crucial role in the preference of putting the architecture of the city into secondary importance in the Nolli map, since Nolli projects the components of the city into the map in accordance with the experience of Rome from the outside of the buildings. Instead of integrating spatial and typological features of architecture, Nolli highlights piazzas, alleys, and street patterns for the outsiders.[35] Only the religious fabric of the city is represented in the map by giving spatial details. Rather than indicating borderline relation between the architectural work and urban space, Nolli exceptionally illustrates the interior organizations and typological features of churches and particular prominent atriums space of the palaces. However, there is no spatial information about other historically and culturally significant buildings. Therefore, the essential objective of the Nolli map is to achieve an overall city composition with its streets, alleys, atriums, the spatial organization of the public architectural works, and building masses. Therefore, there are two different approaches to the representation of architectural works in the city. Suppose it is a public and religious structure; in that case, the interior spatial organizations of these works are included in the drawing, and the spatial relations they establish with the city can be read from the drawing. If not, the architectural feature is decreased into its footprint, and only the borderline relationship between the architecture and the city can be read.

To this end, Nolli worked on a totalized mapping technique without indicating any ideological expression towards the city.[36] Thus, the Nolli map has scientific

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[35] As stated by Verstegen and Ceen, one of the objectives of the Nolli map is to present the total organization of the city to European citizens to attract tourists to Rome. Therefore, the purpose of representing the overall image of Rome includes economic and political concerns demanded by Papal authorities. For further information, see: Ian Verstegen, Allan Ceen, *Giambattista Nolli and Rome: Mapping the City Before and After Pianta Grande*, (Rome: Studium Urbis Press, 2014), 84.
[36] Aureli, *The Possibility of an Absolute Architecture*, 114.

objectivity in the production process by performing exact measurements and site surveys rather than making any interpretation towards the city.[37] Hence, Nolli transferred solid and void characteristics of the city just as it was without judgment except indicating the religious buildings with their interior organization. Its totalitarian excess prevented Nolli from focusing on architectural features and ancient ruins of Rome. Besides, the figure-ground mapping technique, used in the architectural structures out of religious buildings, reduces the representation of the architectural works into the footprint of the buildings without any reference to its archetype and perceives architecture only to obtain the gaps or open spaces between building masses. As a result, the map depicts the urban structure of the city as its primary component, and architecture is used as a composition tool not for a purpose except the religious component of the city.

2.2 Piranesi's Pianta di Roma

Giovanni Battista Piranesi, who is an Italian artist, preeminent etcher of the time, and a crucial figure in art and architectural history due to his etchings of Rome, produced his famous maps Pianta di Roma in 1756 and six years later Campo Marzio.[38] His education in the field of architecture and working experiments as an archaeologist have a significant influence on the production process of these creative etchings.[39] Piranesi had a diverse perception of ancient ruins' representation to achieve a creative, recombined organization in the city compared to his contemporaries.[40]

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[37] Aureli, *The Possibility of an Absolute Architecture*, 114.
[38] Fosco Lucarelli, "The Origins of the Plan: Forma Urbis Romae (between 203 and 211 CE)", last accessed December 10, 2019, http://socks-studio.com/2018/11/04/forma-urbis-romae/.
[39] Hugo Letiche, Geoff Lightfoot, *Demo(s): Philosophy – Pedagogy – Politics*, (Rotterdam: Sense Publishers, 2016), 183.
[40] Kerrianne Stone, Gerard Vaughan, *The Piranesi Effect*, (Randwick: University of New South Wales Press, 2016), 204.

After working as an assistant with the artists having conventional approaches, his work of Pianta di Roma can be interpreted as a declaration of freedom in expression.

The entire antiquarian work is 135 x 117 cm in dimension and composed of fragments of ancient Roman architectural plans represented in marble planes.[41] In order to produce this illustration, Piranesi benefitted from the montage technique and combined certain fragments from the *Forma Urbis Romae*, which is a marble plan of the city of Rome and gives details about the built environment from the top view of this ancient city.[42] *Forma Urbis Romae* is one of the initial plan drawings of Rome, and the date of this carving plan on marble is the beginning of the 3rd century.[43] *Pianta di Roma* is an unusual attempt in those times, composed of particular plan drawings, geographical information, titles of essential regions, and names of architectural works. Therefore, Piranesi used a different compositional technique in the production process to express his critical viewpoint to the image of the city. [Figure 2.2]

The map does not represent the city with its totality like in the Nolli map. Instead, it consists of prominent one hundred eighty-two fragments of marble architectural plans.[44] Because of the marble fragments having diverse depth, the map achieved a three-dimensional quality. The map is based on imaginative predictions about what the city would have looked like if the Roman buildings had not collapsed and became ancient ruins. Thus, in Pianta di Roma, Piranesi reflects a radical stance compared to the common dogmatic approaches of the conventional mapping technique of the time. Thus, Piranesi benefitted from the plans of ancient Roman ruins as a means to investigate their potentials in different rearrangements in the making of the city. In this way, Piranesi's radical mapping of Rome achieved creative freedom in his map

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[41] Lucarelli, "The Origins of the Plan: Forma Urbis Romae (between 203 and 211 CE)".
[42] Tina Najbjerg, "The Severan Marble Plan of Rome (Forma Urbis Romae)", *Stanford Digital Forma Urbis Romae Project*, 2016, last accessed June 8, 2019, https://formaurbis.stanford.edu/docs/FURmap.html.
[43] Najbjerg, "The Severan Marble Plan of Rome (Forma Urbis Romae)".
[44] Lucarelli, "The Origins of the Plan: Forma Urbis Romae (between 203 and 211 CE)".

and pushed the limits of the architectural organization in the city. Rather than urban masses, Piranesi emphasized spatial and typological features in the perception of the city and aimed to prove that Roman architecture also contains many significant precedents in architectural history.

Figure 2.2 Pianta di Roma [Metropolitan Museum of Art, "Plan of Rome..., from Le Antichità Romane (Roman Antiquities)" ca. 1756, last accessed May 13, 2021, https://www.metmuseum.org/art/collection/search/363048.]

The triggering point of the production of Piranesi's map was revealing the significance of Roman architecture, its precedents, and their compositions in the city of Rome to criticize some French theorists who asserted that Roman architecture is just a copied version of Greek architecture.[45] Hence, they criticized Roman architecture continuously over the years in terms of being a botchy imitation of Greek architectural works.[46] In order to assert the contrary, Piranesi started to write

[45] Aureli, *The Possibility of an Absolute Architecture*, 114.
[46] Aureli, *The Possibility of an Absolute Architecture*, 114.

some essays in the matter of valuable Roman monuments based on his viewpoint; however, they were far apart from scholarly writing. As interpreted by Jean-Patrice Marandel, Piranesi was capable of expressing himself visually instead of writing "less at ease with the pen than with the etcher's needle."[47] Therefore, he embarked upon the production of etchings to refute their thesis and illustrate how Roman architectural works are worthy concerning the making of the city. As an end-product, Piranesi depicts the image of the city by montaging precious Roman architectural pieces in Pianta di Roma.

Piranesi believes that representation of the total aspects of the city on the map is impossible. Therefore, in the production of the map, Piranesi benefitted from the fragments and reinterpreted the form of the city. Rather than the scientific truths of the Nolli map, Piranesi reflected certain architectural conjectures and decisions in the Pianta di Roma map. "Piranesi's method of surveying the city and reconstructing its form can be read as a critique of the urban epistemology that the Nolli map exemplified in the discourse implied by its technology and goals."[48] Piranesi tried to represent the city from another perspective which does not reflect the exact organization of Rome; but, in the end, the map includes the reflection of the ideological reading of Rome from the viewpoint of Piranesi. This reading was not a common approach in those times, it was extraordinary, and the map was criticized harshly among the artists of the period.[49] As a response to these criticisms, in the next artwork (*Parere su l'architetture,1765*) Piranesi quoted a sentence from Sallust, who was a Roman historian in 1st century BC, "Novitatem meam contemnunt, ego illorum ignaviam. (They despise my innovation; I despise their cowardice.)"[50]

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[47] Jean-Patrice Marandel, *Europe in the Age of Enlightenment and Revolution (Metropolitan Museum of Art Series)*, (New York: The Metropolitan Museum of Art, 1987), 7.
[48] Aureli, *The Possibility of an Absolute Architecture*, 114.
[49] Tice, "A Digital Extension of a Roman Cartographic Classic".
[50] Giovanni Battista Piranesi, "Parere su l'architettura," in *Observations on the Letter of Monsieur Mariette: With Opinions on Architecture, and a Preface to a New Treatise on the Introduction and Progress of the Fine Arts in Europe in Ancient Times*, trans. David Britt and Caroline Beamish, (Los Angeles: Getty Research Institute, 2002), 141.

Therefore, Piranesi continued to include new perspectives in his works, including Pianta di Roma without any hesitation. Instead of scientific recording and conventional representational technique of Nolli map, Piranesi strengthened the formal thinking methodology in his previous works like *Instauration Urbis* and paid attention to perceive the city through ancient ruins of Rome.

In addition to the methodology of montage, Piranesi represents the architectural plans of ancient ruins by benefitting from the poché technique.[51] Piranesi utilized this method to make the spatial organization of architectural works apparent. Following this objective, the map aims to define the city through an assemblage of architectural pieces and underline the significance of ancient Roman ruins in the composition of the city. To do so, Piranesi put the topographical border of Campo Marzio district at the center without any architectural work included, and he montaged the depiction of Roman ancient ruins around the geographic drawing in Pianta di Roma. ınstead of focusing on the urban spaces and the total organization of Rome like in the Nolli map, Piranesi only revivified historically crucial ancient Roman ruins by montaging the pieces over another.

Consequently, the map depicts the architectural works of Rome and the topographic information of the site separately. Therefore, the interaction between the interior and exterior space relation has some problems in Pianta di Roma due to representing the architectural components of the city without streets or alleys. Probably, observing the possibilities of spatial relations of the ancient architectural works with the urban structure was not the point of Piranesi for Pianta di Roma. The ideological purpose of this map is to reveal the architectural value of ancient ruins and represent the

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Fatma İpek Ek, "18. Yüzyılda Bozulan Ezber: Piranesi", *Skop Dergisi*, Vol. 2 (2012), last accessed December 10, 2019, https://www.e-skop.com/skopdergi/18-yuzyilda-bozulan-ezber-piranesi/578.

[51] Poché is an architectural drawing technique obtained after blackening solid elements in the architectural work, Colosseum, Circus including walls and columns in the cut plane. For further information, see: Mo Zell, *The Architectural Drawing Course: Understand the Principles and Master the Practices*, (London: Thames and Hudson Ltd, 2008), 58.

diversities in the language of Roman architecture.[52] The city is depicted not as urban spaces limited by architectural works but instead, is represented based more on the composition of architectural features. Later on, Piranesi questioned and started to work on the relationship between the interior spatial feature of architectural works and the exterior urban spaces of the city in other etchings he produced.

2.3 Fabrizi's Antiquae Urbis Imago and Piranesi's Campo Marzio

After learning the scientific survey methods from the Nolli map and experiencing the production process of Pianta di Roma in terms of the representation of architecture, Piranesi started to ponder over the relation between the architecture and urban fabric.[53] The approach in Pianta di Roma was quite radical and groundbreaking with regards to highlighting the most precious component of the city composition as architectural fragments. Even though the engraving includes certain exaggerations on behalf of the position of architecture in the image of the city, Piranesi intends to underline what the engraving points out. After emphasizing the critical stance in Pianta di Roma, Piranesi decided to improve his position by working on the interaction between the interior and exterior spaces in the city composition comprehensively to experience new ways of reading the city. For further studies, Piranesi thoroughly examined the dialectic between text and context, figure and field, and the interconversion of these two contradictions in the image of the city.[54] In this sense, Piranesi was impressed by many of the visionary illustrations and study of antiquities in the representation of Roman architecture like the works of Giovanni Battista Montano, Baldassare Peruzzi, Pirro Ligorio.[55] Among these figures, Piranesi

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[52] Aureli, *The Possibility of an Absolute Architecture*, 118.
[53] Jessica Maier, *Rome Measured and Imagined: Early Modern Maps of the Eternal City*, (Chicago: University of Chicago Press, 2015), 226.
[54] Michael T. Swisher, *Diagramming the Big Idea: Methods for Architectural Composition*, (New York: Routledge Press, 2013), 112.
[55] John Wilton-Ely, "Introduction" in *Observations on the Letter of Monsieur Mariette: With Opinions on Architecture and a Preface to a New Treatise on the Introduction and Progress of the*

potently started to be affected by Pirro Ligorio's imaginative approaches, which emphasize the architectural language and façade formation as well as the historical context.[56] [Figure 2.3]

Figure 2.3 Antiquae Urbis Imago [Mariabruna Fabrizi, "Pirro Ligorio's 'Antiquae Urbis Romae Imago' (Image of the Ancient City of Rome)", last accessed May 26, 2021, http://socks-studio.com/2016/03/13/pirro-ligorios-antiquae-urbis-romae-imago-image-of-the-ancient-city-of-rome-1561/.]

Pirro Ligorio, who is an Italian architect, painter, prominent antiquarian, and a talented figure in the pictorial representation of his time, worked on Roman

Fine Arts in Europe in Ancient Times, (Los Angeles: Getty Research Institute Publications, 2002), 27.

[56]Gabriele Mastrigli, "In Praise of Discontinuity" in *Power: Producing the Contemporary City*, (Rotterdam: NAI010 Publishers, 2007), 46.

antiquities and inscriptions for years in the Renaissance era.[57] Ligorio produced several schematic drawings to reconstruct the image of the city by using ancient monuments and medieval ruins in Rome. *Antiquae Urbis Imago* is one of the imaginative illustrations drawn by Ligorio in 1761 from bird's eye-view to reflect the perspective view of the ancient ruins in the city composition. The drawing consists of the architectural monument of medieval times, including the Colosseum, Circus Maximus, Pantheon, and random unidentified housing complexes between the ancient ruins to highlight the presence of the precedents in the dense urban texture. Also, some major ancient roads of Rome are mentioned, like via Flaminia and via Sacra, by indicating the spatial character of roads and using some labels in the perspective drawing. Thus, in Antiquae Urbis Imago, Ligorio depicts Roman architectural precedents by referencing the existing urban fabric of Rome to examine the individual architectural works and their relation with the urban context primarily.

In the production process of Antiquae Urbis Imago, Ligorio completes the missing parts of the ancient ruins by benefitting from the depictions of medieval buildings in coins, the drawings in ancient scrolls, and representations in the inscriptions to achieve iconographic evidence of the buildings.[58] In this way, Ligorio represents the anonymous structures and known landmarks of the city with an imaginative organization in the composition. Instead of topographical information, the architectural image of the city and its relation to the surroundings are the main points of the drawing. In this regard, Ligorio has an objective to express the ancient architectural ruins of Rome together with the urban context in his work. Hence, the visual impression of the architectural works in Antiquae Urbis Imago gains greater importance rather than their forms in the city composition as in the Nolli map. The imaginative position of Ligorio and the organization of figure and field relations in Antiquae Urbis Imago substantially influenced the antiquarian practices of Piranesi.

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[57]Maier, *Rome Measured and Imagined: Early Modern Maps of the Eternal City*, 121.
[58] Maier, *Rome Measured and Imagined*, 128.

Therefore, Piranesi synthesizes his creative approach with Ligorio's imaginative representation of Rome and the scientific methodologies to depict the architectural form learned from Nolli.[59] Due to adopting and enhancing the approaches of Ligorio and Nolli, Piranesi's works can be interpreted as an alternative reading of the city in terms of including architectural forms together with spatial details and urban fabric, particularly in Campo Marzio. [Figure 2.4]

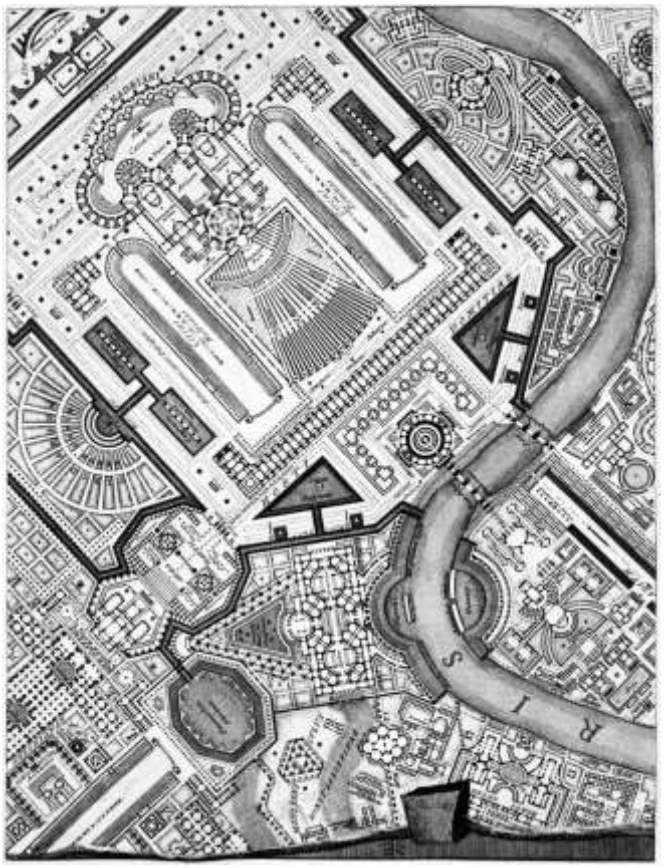

Figure 2.4 A Partial Plan of Campo Marzio by Piranesi [Vincenzo Fasolo, "The Campo Marzio of G. B. Piranesi", last accessed June 26, 2020, https://www.quondam.com/e26/2691.htm.]

Piranesi completed his pioneer work, Campo Marzio, which reflects a harmonization of measurement and creativity in the same illustration in 1762, just one year after

[59] Aureli, *The Possibility of an Absolute Architecture*, 137.

Antiquae Urbis Imago.[60] The plan of Campo Marzio consists of six large copper plates and 135 x 117 cm in total. The iconographic map focuses on the Campo Marzio district of ancient Rome and asserts a diverse way of reconstructing architecture in the city. Campo Marzio can be regarded as a visionary project to reorganize the site based on Rome's ancient architectural character by having relative freedom instead of an archaeological study or overall representation of the city. Campo Marzio seeks not to represent the historical city of Rome or its reflection on the contemporary city-making methods.[61] In the composition, Piranesi influentially benefitted from the ancient remnants to structure modern Rome because Campo Marzio is composed of the architectural precedents between the 15th and 18th century Roman architecture in addition to including some design speculations and imagination of Piranesi.

In this sense, Piranesi constitutes a rich vocabulary of architecture from the ancient ruins to generate an alternative organization in the city. As Aureli mentions, "…ruins were not just evidence of a past perse, but also became examples that resonated conceptually and formally as the foundations for the grammar of contemporary city form."[62] Hence, in Campo Marzio, ancient ruins are used as the primary design tool to obtain a fictitious image of the city, and "its complex palimpsest is to rise new ideas and new creations".[63] Besides, Piranesi depicts a different selection of architectural precedents in this work. Instead of the domination of prominent ancient monuments, Piranesi also concentrates on unknown ruins in the making of Campo Marzio's plan in order not to omit them from being a precious component of the city.[64] According to Piranesi, the diversity in the function and architectural language

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[60] Terry Kirk, "Piranesi's Poetic License: His Influence on Modern Italian Architecture", *Memoirs of the American Academy in Rome*, Vol. 4, (Supplementary Volumes) (2006): 268.
[61] Teresa Stoppani, "Translucent and Fluid" in *From Models to Drawings: Imagination and Representation in Architecture*, (New York: Routledge Press, 2007), 100.
[62] Aureli, *The Possibility of an Absolute Architecture*, 94.
[63] Kirk, "Piranesi's Poetic License: His Influence on Modern Italian Architecture", 268.
[64] Stanley Allen, "Piranesi's 'Campo Marzio': An Experimental Design", *Assemblage*, No.10 (1989): 75.

is the main ingredient enriching the city composition.[65] Therefore, Piranesi defines the city in Campo Marzio with fragments of baths, libraries, aqueducts, city walls, monuments, and so on in an arbitrary organization by challenging the conventional way of positioning architectural works. When Manfredo Tafuri analyzes the plan of Campo Marzio, Tafuri points out that the involvement of various architectural plans without any relation among themselves makes the composition preciously open to new interpretations, and Tafuri describes this situation as "an architectural banquet of nausea".[66]

Piranesi also integrates particular fictitious plan drawings that are not based on archeological evidence and have no historical reality. The functional relation between architectural works and hierarchical order is not a concern of Piranesi's imaginative city plan. Instead, depicting the city based on spatial variety and the dissolution of the border between interior and exterior spaces are precious contributions. In this regard, the main achievement of this map is the alteration in the perceptional approach towards the relation between architectural works and urban spaces in the city organization. Piranesi changes the typical approach of the figure-field technique to figure-figure relation in Campo Marzio in order not to read the urban spaces of the city as a background. Thus, Piranesi asserts a new spatial approach in the design process towards integrating the architecture of the city and urban fabric by behaving the urban field as a full of the design surface. Consequently, Piranesi achieves a smooth transition between spaces, dynamic and changing urban characteristics in the city composition.[67] As a result, Piranesi reconstructed the architecture of the city and urban spaces by giving equal importance and addressing

[65] Gabriele Mastrigli, "Il Campo Marzio Dell'antica Roma" in Campo Space Architectural Lectures, (June 13, 2017, Rome), last accessed June 25, 2020, http://www.campo.space/videopodcast/.
[66] Manfredo Tafuri, *The Sphere and the Labyrinth: Avant-Gardes and Architecture from Piranesi to the 1970s*, (Cambridge: The MIT Press, 1990), 35.
[67] Stoppani, "Translucent and Fluid", 101.

the making of space as an essential point. Hence, there is no interior and exterior space differentiation in Campo Marzio.

Instead of hills and valleys, Piranesi changes the topographic feature of Rome in Campo Marzio by accepting the site as a flat surface like in Ligorio's work of Antiquae Urbis Imago. In this way, Piranesi focuses on montaging the various plan drawings of Roman precedents rather than dealing with topographical issues of the site. Meanwhile, Piranesi attempts to go beyond the representation of architectural works as footprints to underline the spatial stance of the precedents. Therefore, Piranesi interprets the spatial value of the precedents and reproduces the architecture of the city based on these observations as well as introducing his critical position. Besides, in Campo Marzio, Piranesi depicts the architectural works by indicating their interior organization to represent the spatial features of the ancient ruins in the image of the city. In this sense, the map includes typological information of the built environment instead of indicating only the footprints in the figure-ground plans in Nolli's engravings.[68] Thus, Piranesi's work predominantly dwells on the analysis of the spatial organization of precedents and juxtapositions the plans of ancient ruins to obtain an imaginary city composition that also champions creativity.[69] In the plan of Campo Marzio, the city is not arranged according to the urban spaces or street patterns of Rome. Instead, enormous structures and architectural works in different forms organize all of the composition.

Thus, Piranesi emphasizes the importance of defining the city through spatial complexity without differentiating the architecture of the city from urban spaces. In the works of Piranesi, it is evident that architecture is the main component in the making of the city, especially in Campo Marzio. Piranesi benefits from architectural precedents as an instrument to organize the plan of Campo Marzio with possible

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[68] Stefano Corbo, "Basis" in *From Formalism to Weak Form: The Architecture and Philosophy of Peter Eisenman*, (New York: Routledge Press, 2014), 19.
[69] Mastrigli, "Il Campo Marzio Dell'antica Roma", http://www.campo.space/videopodcast/.

spatial varieties and go beyond the conventional way of representation of architecture in the city compositions. Therefore, Piranesi read the city of Rome with its architectural precedents, ancient ruins, and accumulation of fragments instead of a totalitarian approach in mapmaking to direct "architecture's gaze back upon itself".[70] Hence, some of the crucial aspects of the city get lost in the map if the scientific precision of facts becomes the most significant property in the representation. Campo Marzio reflects the assertion of perceiving the city through its architectural feature rather than the direct transformation of the information on the site. In doing so, Piranesi's map approximates the architectural argument of *Plan Game*. Also, it can be interpreted as a precedent of this exercise by emphasizing ancient ruins, precedents of Roman architecture, and its representational technique.

Indeed, *Plan Game*, which is a collective architectural drawing procured to ponder over an alternative way of making the city, is a hybrid of Nolli Map and Piranesi's Pianta di Roma, just like Campo Marzio. First, *Plan Game* is composed of a similar approach to Piranesi's Pianta di Roma. It brings architectural works to the fore compared to the urban environment and includes them in the drawing with their interior spatial organization. At the same time, both drawings read the city through architectural precedents. While Piranesi emphasizes the examples of Roman architecture found in Rome at various times, *Plan Game* expands the selection boundaries a little more. It brings together the plans of architectural works from ancient Roman and ancient Greek periods. Also, *Plan Game* reflects the relationship between architecture and the city, which is missing in Piranesi's Pianta di Roma, to the drawing by referring to one of two different spatial approaches in the Nolli map. *Plan Game* is based on the relationship established between religious places and the urban environment in the Nolli map by emphasizing the in-between spaces rather than the bold-borderline relation composed between the architectural works and the

[70] Allen, "Piranesi's 'Campo Marzio': An Experimental Design", 71.

urban spaces. Hence, *Plan Game* synthesizes two canonic historical approaches in the history of architecture and generates an alternative way of making of the city.

CHAPTER 3

UNCOVERING THE *PLAN GAME*

Figure 3.1 *Plan Game* [Alexander Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, Cambridge: The MIT Press, 1995, 324. Reprinted courtesy of The MIT Press.]

Plan Game is a fictitious exercise played by a group of faculty members at Texas University School of Architecture in the 1950s.[71] Colin Rowe, Bernhard Hoesli, Robert Slutzky, and John Hejduk, who were first hired as young academics at Texas

[71] Alexander Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, (Cambridge: The MIT Press, 1995), 324.

University in 1952, invented this sophisticated drawing exercise.[72] This game is based on collaging architectural plans from all the times and styles to observe the possible combinations without limitations of reality. After long working hours, especially on Thursday nights, they preferred to play this collective drawing game to clear their heads and observe the possible city planning compositions on smaller scales.[73] It provides to experience fictitious architectural organizations and the reinterpretation of reality. [Figure 3.1]

John Hejduk, who was one of the initiators of *Plan Game*, expressed how they played this game during those years as follows:

> We would take a large blank sheet of drawing paper and begin to draw plans of buildings, historic and otherwise. Colin [Rowe] would say I am going to draw the plan of Villa Madama, then Bernhard [Hoesli] would draw the plan of Wright's Gage House, etc. All night long, in the early hours of the morning the paper would be filled with plans from all times, many hybrids too. At the end Colin would be devilishly amused and delighted. In retrospect who would have thought those plans of Classicism, Neo-Classicism, Modern, Constructivism and Contemporary would have been the genetic coding of the architectural monsters which followed?[74]

As Hejduk mentions, they used to pin a blank drawing paper on the wall and started to draw plans of historic building types and architectural precedents one by one.[75] Participants can observe the drawings of others when it is their turn and have the power to change the design process by affecting the way how plans are combined. Erasure and editing are forbidden operations in the game; but, it is welcomed to draw some additional partials, which are not available in the current architectural

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[72] Mark Morris, "All Night Long: The Architectural Jazz of the Texas Rangers" in *Drawing Architecture*, Helen Castle & Spiller, Neil eds., (London: Academy Press, 2013), 20-21.
[73] Michael Jasper, "Re-reading Rowe and Koetter's Collage City" in Architectural Urban Strategy, SAHANZ 2017 Annual Conference Proceedings, last accessed June 2, 2019. https://www.sahanz.net/wp-content/uploads/jasper-m-architectural-urban-strategy.pdf.

[74] Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, 324.
[75] Morris, "All Night Long: The Architectural Jazz of the Texas Rangers", 21.

precedents, in order to increase consistency between the fragments.[76] In addition, the drawing can include individual architectural plans in various scales; however, the whole composition should have a coherent scale by benefitting from resizing operation. Therefore, the preciseness of the building plans does not have priority importance for this sketchy game. The crucial point is the ending up with a composition that includes diverse architectural typologies.

One example of *Plan Game* is published for the first time in 1995 in the book "The Texas Rangers: Notes from an Architectural Underground" written by Alexander Caragonne, an undergraduate student at Texas University in the late 1950s. Caragonne got in contact with John Hejduk to get information about *Plan Game* and Hejduk shared a scanned version of one of the drawings from his archive, which is the only known example of *Plan Game* up to now.[77] There are probably many drawing sheets of *Plan Game*, some of them just got lost, and the others are in the other archives. However, it is not known where those samples are preserved.[78] Because of this condition, there is limited information and resources about *Plan Game*. Similarly, as material quality, the dimension of the drawing sheet is another unknown aspect of the game. Mainly the following features will be investigated in *Plan Game*; the actors of the game, for what purpose, and in which period it was played and the architectural fragments of the game.

3.1 Actors | The Texas Rangers

In the mid-1950s, a group of architects, artists, and art historians had a chance to work together at the Texas University School of Architecture in Austin.[79] These

[76] Looking at Cities, "The Plan Game: The Origins of Collage City", last accessed December 2, 2019, https://lookingatcities.info/2018/09/05/the-plan-game-the-origins-of-collage-city/.
[77] Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, 324.
[78] Above mentioned example of *Plan Game* was exhibited at ETH Zürich in 2016. The name of the exhibition is "Drawing Cabinet" curated by Alexander Lehnerer and Matthew van der Ploeg.
[79] Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, 187.

academics achieve an essential effect on the architectural discourse in a few years due to their reformist approaches in design studios. Harwell Hamilton Harris, who was one of the key figures of this success, was the dean of the School of Architecture at Texas University from 1951 to 1955.[80] Rather than conventional teaching methods, Harris perceived architectural education as an endless exploration that should also include innovative approaches in the curriculum of the program.[81] In order to realize this objective, he decided to alter the design curriculum and the profile of the academic staff of the School of Architecture at Texas University.

Therefore, Harris determined to recruit architects and designers who have the ability to change the discourse of architectural education, as in the case of the Bauhaus movement in the school of architecture.[82] Harris was highly inspired by the Bauhaus Movement, especially Josef Albers' creative viewpoints in the teaching methodology of architecture.[83] Josef Albers, who was an American painter, sculptor, and theoretician, became an instrumental figure to convey the principles of European modernism to the United States during the 1950s.[84] Although he gets a degree in painting, Albers achieved an enormous impact on architectural education with his art theories. Because of the Albers' competent position in design education, Harris got in touch with Albers during his visit to Yale in 1952 to request the names of possible art students of Albers for the position at Texas University.[85] Among his students, Albers suggested Lee Hirsche for the job. In addition to Hirsche, two more art

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[80] Lisa Germany, "We're not Canning Tomatoes: The University of Texas at Austin, 1951-1955" in *Harwell Hamilton Harris,* (Berkeley: University of California Press, 1991), 139.
[81] Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, 187.
[82] Nan O'Sullivan, "Duplicity: The Translation of Bauhaus Pedagogy into American Modernist Architectural Education", SAHANZ 2014 Conference in New Zealand, last accessed November 23, 2019, https://www.academia.edu/7598864/Duplicty_The_translation_of_Bauhaus_Pedagogy_into_American_Modernist_Architectural_Education.
[83] Jeffrey Saletnik and Robin Schuldenfrei, ed., "Pedagogic Objects: Josef Albers, Greenbergian Modernism and the Bauhaus in America" in *Bauhaus Construct: Fashioning Identity, Discourse and Modernism*, (London and New York: Routledge Press, 2009), 84.
[84] Jeffrey Saletnik, "Pedagogic Objects", 86.
[85] Lisa Germany, "We're not Canning Tomatoes", 142.

students of Albers: Robert Slutzky and Irwin Rubin, got an offer from Harris to become a part of the faculty members.[86] Hence, Harris benefitted from the ideas of leading figures of European modernism like Josef Albers to enlarge the perspective of architectural education in the School of Architecture at Texas University and started to compose the design team in his mind.

To attain the ideal team in his mind for the School of Architecture, Harris gathered some of the major figures and convinced them to move to Texas University.[87] Some of the prominent members of this group of academics are Colin Rowe, Bernhard Hoesli, John Hejduk, Robert Slutzky, Irwin Rubin, Lee Hodgden, John Shaw, and Werner Seligmann, who are called The Texas Rangers later on.[88] [Figure 3.3] All architectural educators of The Texas Rangers improve their design skills in different fields, which provides an unpredictable effect on architectural education.[89] For instance, Colin Rowe has developed his knowledge on architectural theories; Bernhard Hoesli has primarily worked on pedagogical principles of architectural education; and Robert Slutzky has tried to strengthen the relationship between painting and architecture by benefitting from his painter background.[90] As a result, Harris employed three painters from Yale: Robert Slutzky, Irwin Rubin, and Lee Hodgden; an urban designer from Cornell University: Werner Seligmann; an architect from Gropius' GSD Masters program: John Hejduk; two British architects: Colin Rowe and Bernhard Hoesli; and one architect graduated from Texas University: John Shaw.[91] This variety in the field of interest provides a unique

[86] Michael Brawne, "The Texas Rangers: Notes from an Architectural Underground", *Architectural Research Quarterly*, Vol. 1 (1995): 96-97.
[87] Lisa Germany, "We're not Canning Tomatoes", 144.
[88] Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, 324.
[89] Federica Soletta, "The Texas Rangers: School of Architecture, University of Texas Austin" in Radical Pedagogies Research Project, (Copyright: Princeton University School of Architecture, 2012), last accessed February 18, 2021, https://radical-pedagogies.com/search-cases/a17-texas-rangers-school-architecture-university-texas-austin/.
[90] Lisa Germany, "We're not Canning Tomatoes", 144.
[91] Lisa Germany, "We're not Canning Tomatoes", 144.

academic staff at Texas University and causes significant achievements in architectural discourse.

Figure 3.2 Members of The Texas Rangers. Faculty of the School of Architecture, University of Texas, Austin. 1954-1955. From left to right: Hugh McMath, Lee Hirsche, Joseph Buffler, Goldwin Goldsmith, Hugo Leipziger Pearce, John Hejduk, Harwell Hamilton Harris, Robert Slutzky, Colin Rowe, Bernhard Hoesli, Martin Kermacy, Kenneth Nuhn, Robert White. [Alexander Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, Cambridge: The MIT Press, 1995, 12. Reprinted courtesy of The MIT Press.]

This success spread along with the architects. The coordinators working at other universities and architectural critics appreciated new approaches towards teaching architecture in the design studios. Charles Moore, who is an American architect and theorist, remarks the significance of having outstanding characteristics as academics in order to achieve the impression in the discourse as follows: "Much of the Texas Rangers' magic was, of course, due to the presence in Austin of some genuinely extraordinary people."[92] Including academics from different backgrounds cause a radical change in the design curriculum of Texas University. Instead of end-product

[92] Charles Moore, "Foreword to The Texas Rangers, by Alexander Caragonne" in *You Have to Pay for the Public Life: Selected Essays of Charles W. Moore*, (Cambridge: The MIT Press, 2004), 386.

oriented design studios and conventional predispositions in architectural education, they gave importance to the design process and architectural precedents in terms of beneficial guidelines. Afterwards, their teaching methodology had an enormous effect on the other architectural programs in the United States and the continent of Europe.[93]

3.2 Creative Recombination

Plan Game is based on the collaging of various plan drawings of precedents in architectural history. It generates speculative city planning approaches due to its creative recombination feature. In *Plan Game,* the architectural plans belong to diverse architects in different periods and regions with different typologies. The virtue of this game is recombining all of those fragmented narratives into one drawing composition. By doing this, the end-product can reflect various spatial possibilities in the composition as a fictitious smaller city planning example.

In order to comprehend the practice of *Plan Game,* it is necessary to analyze the feature of *Exquisite Corpse* and its generative process. *Exquisite Corpse* could be argued as an initiator of *Plan Game* of The Texas Rangers in the design history, and they are played with similar rules.[94] *Exquisite Corpse* is a kind of game that surrealist artists developed in the late 1920s.[95] The game is based on collective participation. Someone starts to draw on a blank paper, then fold it and give it to the other player for his/her contribution. This process continues till the paper is full of drawing

[93] Gerardo Brown-Manrique, "The Texas Rangers: Notes from an Architectural Underground", *Journal of the Society of Architectural Historians,* Vol. 55, No. 2 (1996): 192.
[94] Morris, "All Night Long: The Architectural Jazz of the Texas Rangers", 21-22.
[95] Kanta Kochhar-Lindgren, Davis Schneiderman and Tom Denlinger, *The Exquisite Corpse: Chance and Collaboration in Surrealism's Parlor Game,* (Lincoln: University of Nebraska Press, 2009), xii.

pieces.[96] In the beginning, the game aims to have various combinations of both images and words to broaden the horizon of imagination.[97] Andre Breton, who is one of the developers of *Exquisite Corpse*, underlines the power of freedom in actions during the production of the collage: "…bore the mark of something which could not be created by one brain alone… With *Exquisite Corpse*, we had at our command an infallible way of holding the critical intellect in abeyance and of fully liberating the mind's metaphorical activity."[98] In this way, participants have an infinite possible combination in the game, and the end-product avoids replications. [Figure 3.2]

Figure 3.3 Exquisite Corpse [Exhibited Drawings, Honolulu Museum of Art, 2015, last accessed June 5, 2019, https://honolulumuseum.org/art/exhibitions/14844-exquisite_corpse/.]

[96] Michael Sorkin, *Exquisite Corpse: Writing on Buildings*, (New York: Verso Press, 1994), 5.
[97] After a couple of times, the collaging technique of images dominates the word combination practice in *Exquisite Corpse* exercise. However, the name of the game comes from one of those initial word combinations: "The exquisite corpse will drink the young wine." Therefore, the name of this game also reflects the idea of *Exquisite Corpse* that is the combination of two random words. Combining those two words is not something prevalent in real life. Instead, it pushes the limits of collaging technique and having a variety of the end-product is the primary purpose of this game.
[98] André Breton, *Le Cadavre Exquis: Son Exaltation*, trans. Patrick Waldberg, (London: Thames and Hudson, 1965), 95.

Due to this speculative approach provided by *Exquisite Corpse*, it becomes a technique used frequently in other fields of design, including art, architecture, and literature.[99] Due to the technique in *Exquisite Corpse*, it prevents the designer from the desperate effort of controlling everything in the design field. It provides a combination of various fragments in the end-product. In doing so, totalitarian excess of the conventional methods is excluded from the design process of *Exquisite Corpse* exercise. Many architectural studios benefit from this collective practice in order to obtain unpredictable works by using freedom of action in the design process.[100] Also, Sam Jacob, a professor of architecture at the University of Illinois, offers to benefit from this game to obtain alternative design proposals: "This game helps us out of the self-replicating horror of contemporary architecture and urban design."[101]

Like *Exquisite Corpse*, the end-product of *Plan Game* has a different characteristic compared to conventional city planning drawings. The building plans illustrated with their interior organizations instead of figure-ground maps of the urban design. Also, different from *Exquisite Corpse*, the organization in *Plan Game* is not coincidental; instead, it is based on an urban grammar that can be read from the end-product. This approach allows perceiving the spatial relation of the building with the overall organization. Therefore, *Plan Game* has the power to contain typological details about the built environment. As participants drew all of the building plans with their interior organizations, it is possible to discuss the architectural terms of precedent, archetype, and creative recombination approach in architecture regarding *Plan Game*.

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[99] Michael Sorkin, "Exquisite Corpse", Bernard & Anne Spitzer School of Architecture, last accessed June 3, 2019, https://ssa.ccny.cuny.edu/blog/2015/07/07/exquisite-corpse/.
[100] Federica Goffi, "Re-making the Exquisite Corpse Studio", *The Value of Design*, 97th ACSA Annual Meeting Proceedings, 52.
[101] Sam Jacob, "Part 2: Projects of Assemblage" in Exquisite Corpse: Architecture Assembled Symposium, (June 3, 2016, Delft University of Technology), last accessed June 4, 2019, http://www.theberlage.nl/events/details/2016_06_03_exquisite_corpse_architecture_assembled.

Furthermore, different from *Exquisite Corpse,* the participants can observe the drawings of others in *Plan Game* when it is their turn. Thus, in addition to its creative recombination approach, the end-product has a consistency between the fragments in *Plan Game* but has limited flexibility compared to *Exquisite Corpse*. Besides, participants have the power to change the design process by affecting the way how building plans are combined.

The essence and the impact of *Plan Game* which has been played about twenty-five years before the publication of *Collage City*, can be observed in the book in which Colin Rowe and Fred Koetter reflect their opinions about the ideal city.[102] In this book, they explain the importance of collage and its relation with the ideal city compositions. "The value of 'Collage City' lies in overlapping fragments of attempts to make ideal cities where past and present needs and values are apparent."[103] Though this comment is about the book of *Collage City*, it also expresses the main objective of *Plan Game*. It underlines the significance of overlapping fragments, approaching the ideal city, and togetherness of past and present, which are the crucial components of *Plan Game*.

Plan Game can be defined as a smaller scale city planning exercise because the architectural operation in this game combines various building plans, which is also very similar to the essence of city planning. In *Plan Game,* having speculative approaches plays a significant role in obtaining open-minding, creative end-products rather than predictable results in conventional urban design. To attain this creativity level, collage is a crucial technique in *Plan Game* which alters the conventional method of urban design approach and instead it presents new ways of inspiration. Mainly, this technique is based upon how Rowe overcomes the totalitarian design processes. Rowe indicates the significance of doing certain fantasies and pushing the

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[102] Colin Rowe and Fred Koetter, "Crises of the Object: Predicament of Texture" in *Collage City*, (Cambridge: The MIT Press, 1984), 55-72.
[103] Mark Dorrian and Frederic Pousin, *Seeing from Above: The Aerial View in Visual Culture*, (London: I. B. Tauris, 2013), 200.

limits of possibilities as follows: "…this kind of inquiry requires that certain level of fiction be introduced into the design process: speculations about what should be in a city plan versus what it actually can be."[104] Benefitting from fantasies and design speculations in the design process can help to contain the whole range of possibilities in the design field.[105]

According to Rowe, collage is a kind of design tool which is used to avoid the problems of total design: "…collage acts as an antidote to the mental structures which are responsible for the totalitarian excess."[106] Hence, the combination of the fragments occurs in *Plan Game* through benefitting from the strategy of collage. Also, Joan Ockman defines the logic of collaging technique in *Plan Game* by emphasizing the historical recombination aspect by using the term: "hybridizing fragments of history".[107] Due to the fact that each building plan drawn on the blank paper of *Plan Game* represents a fragment from architectural history. Putting together all this diverse information that did not intersect with each other in history causes unforeseen fantasies. Therefore, the end results give a chance to reflect various possibilities in terms of city planning. Because of this speculative way of collaging techniques of different building plans, it is also possible to define *Plan Game* as the worlds of what if. The question of if pushes the limits of fictitious city planning approach in the game and has the power to reflect new interpretations about city compositions due to the design speculations in *Plan Game*.

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[104] Colin Rowe, "Otherwise Casual Notes on the Pragmatic, the Typical and the Possible", *Cornell Journal of Architecture*, Vol. 2 (1982): 9.
[105] Ruth Fincher and Kurt Iveson, *Planning and Diversity in the City: Redistribution, Recognition and Encounter (Planning, Environment, Cities)*, (London: Palgrave Macmillan Press, 2008), 2.
[106] Dom Holdaway and Filippo Trentin, *Rome, Postmodern Narratives of a Cityscape*, (London and New York: Routledge Press, 2015), 161.
[107] Joan Ockman, "Form without Utopia: Contextualizing Colin Rowe", *Journal of the Society of Architectural Historians*, Vol. 57, No. 4 (1998): 448.

3.3 Analysis of the Architectural Fragments of *Plan Game* Drawing

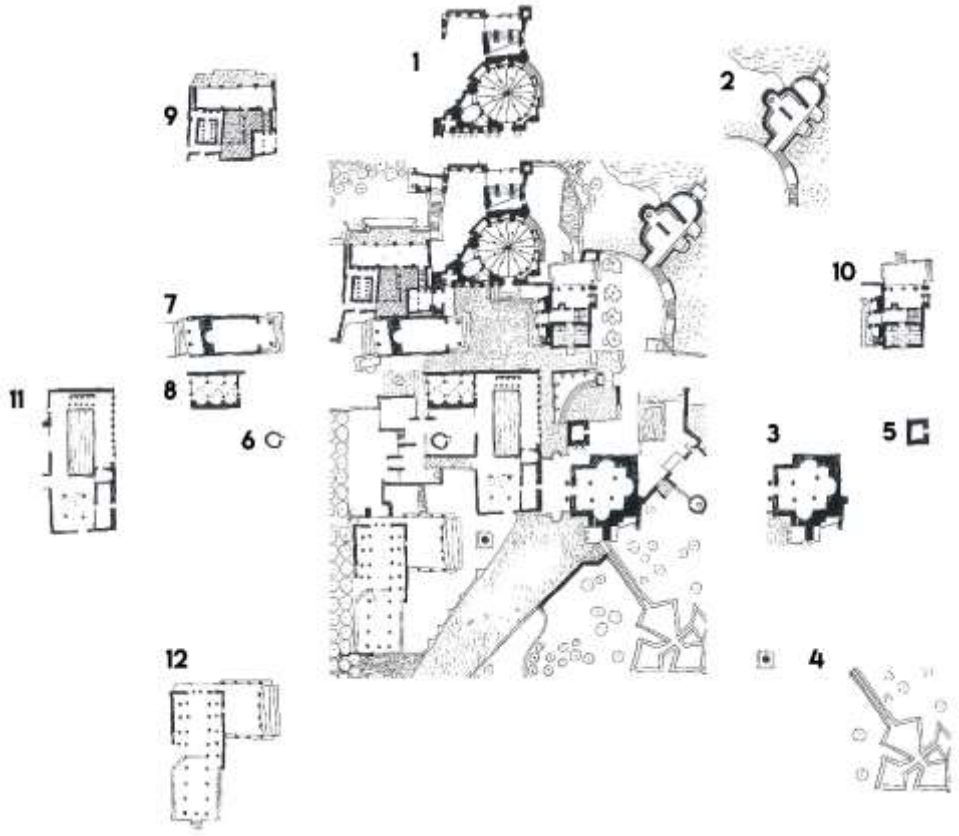

Figure 3.4 Analysis of Architectural Precedents in *Plan Game*. They are numbered according to the order mentioned in the thesis. The visual made by the author.

As stated in the previous chapters, the only known example of *Plan Game* till now is the exemplar published in *The Texas Rangers: Notes from an Architectural Underground* written by Alexander Caragonne, an undergraduate student at Texas University in the late 1950s.[108] The drawing primarily consists of architectural plans belonging to the Ancient Roman and Ancient Greek periods. Besides, there are some

[108] Also, the copy of the drawing in the gta Archives was exhibited at the "Drawing Cabinet Exhibition" among the documents of John Hejduk, curated by Matthew van der Ploeg and Alessandro Bosshard in 2016.

plans bearing traces from the Baroque, Hellenistic and Modern periods. Unfortunately, neither in Caragonne's book nor in any other resource, detailed research has been done on the architectural elements in this drawing. Therefore, detailed information on the subject has not been presented and analyzed in any academic publication yet. Thus, the thesis aims to uncover *Plan Game* and reveal the architectural qualities of the drawing. Examining each architectural fragment in *Plan Game* is crucial to comprehend the ideas behind it. Hence, the plan drawings were tried to be interpreted and decomposed by comparing them with the plans of the historical buildings and ancient city plans. The plans of some architectural precedents in the drawing are also included in some historical sources, such as the Nolli Map, the Circus Maximus Ancient Rome Plan, and the Roman Forum Plan.

Among the building plans in the drawing, there is a baroque church having a triangular chapel form from the outside at the top middle. The plan drawings belong to the Baroque Period and resemble the churches designed by Donato Bramante and may also be an interpretation of the Santissimo Nome di Maria al Foro Traiano Church on the Nolli map. The triangular form applied in the plan by the participant to generate the main altar can be an interpretation of the canon of the central plan in the baroque churches. Besides, the ribs of the dome are also specified by using cross lines. In addition to the main entrance, there are two grand stairways positioned perpendicular to the drawing plane added to the church plan. This addition could strengthen its relationship with the surroundings and prevent the church from being an independent architectural object in the plan drawing. With this addition, the boundary between architectural space and urban public space starts to be blurred. Thus the purpose of this addition can be a trying to find a middle ground in the significant differentiation between the modern and the traditional city that Rowe discusses in *Collage City*. [Figure 3.4-1]

At the top right, there is a public terrace consisting of circular forms. The volumetric intertwining is designed probably to experience the flexibility in the space and bears traces from the Modern Period. It can also be an interpretation of the triclinium space in the ancient Roman dwellings. It can be defined as a common space that includes

discussions and philosophical dialogues besides the activities of drinking and eating. It has a flexible spatial organization that the portable artworks can be arranged according to the relevant activity. Hence the flexibility found in action and triclinium couch is also reflected in the spatial relations of the plan as mentioned earlier due to interlocking semi-circular shards. [Figure 3.4-2]

The five-naved church plan located at the lower right, consisting of squares and semi-circular forms, is an example of a prominent architectural form used in churches in the Byzantine Period called cross-in-square, crossed-dome, or quincunx church. Germigny-des-Prés oratory built at the beginning of the 9th century can be an architectural precedent of this quincunx church. Also, the Basilica of Constantine in the Plan of the Roman Forum has a similar spatial organization to the plan mentioned above. Unlike this architectural precedent, the church plan drawn following the quincunx archetype is illustrated by the carving out methodology. Therefore the interior form of the space is different from its exterior lines due to this operation. In this respect, the five-naved quincunx church plan resembles the floor plan of Sant'Andrea al Quirinale by Gian Lorenzo Bernini. [Figure 3.4-3]

In the Nolli Map, the urban element having a star form, designed to protect the tower bastion called Castel Sant'Angelo and chapel inside by the architects Francesco Laparelli and Michelangelo Buonarroti. It is more associated with the open space in *Plan Game* and is located at the bottom right corner of the drawing. Therefore, the function of the existing urban form in the Nolli Map is reinterpreted in *Plan Game*, and it defines an open public space with an obelisk placed right across it. It is a commonly used architectural element in the city composition of ancient times to define open public spaces and the city centers. The examples of obelisk can be seen in both the Nolli Map and the Circus Maximus Ancient Rome Plan. Unlike its architectural precedent of Castel Sant'Angelo, the star formation in the plan is obtained by the lozenge-formed open spaces, and the linear corridors connect these spaces. One of these corridors, which connects the plan drawing with the city plan, includes stairs and differentiates the character of the main transition zone by adding

a vertical circulation element. Also, the central space of the plan is closed and narrow compared to its architectural precedent in Nolli Map. [Figure 3.4-4]

The megaron plan is also included in *Plan Game*, closed to the center of the drawing. It is a common architectural form in ancient Greece and the Middle East and composed of "an open porch, a vestibule, and a large hall".[109] In a sense, it is also the symbol of the first attempts of architecture in Anatolia, which hosts the first settlements with the simplest space definition. In the original form of megaron, two side walls are drawn thicker than the front and rear walls, so it has a square form from the outside and a rectangular space from the inside. However, since the borders are drawn with the same thickness in *Plan Game*, there is no difference in the interior and exterior form. [Figure 3.4-5]

At the left middle part of the drawing, there is an example of a tholos plan. Monopteros Tholos, which can be defined as a small-scale temple, including a cylindrical cell inside the circular colonnades, belongs to the Classical and Hellenistic periods. A prominent architectural precedent of the tholos temple is the main temple in the 4th century Athena sanctuary drawing at the ancient site of Delphi, under the name of Tholos of Delphi. The tholos plan in the drawing does not consist of the colonnades stand in a circular line at the exterior part. Instead, circularity is defined by the smooth circular wall. It includes an open porch, a vestibule, and a large hall part following the spatial organization in the archetype of the tholos. [Figure 3.4-6]

At the left side of the drawing, there is an example of a double anta temple, one of the leading church forms of Greek architecture, is composed of an open portico and a larger interior room called naos with two antea on each side. The double anta temple archetype does not include a circular niche. However, this plan drawing can be named a reinterpretation of the temple plan by adding semi-circular niches to the

[109] Encyclopedia Britannica, "Megaron", last accessed May 10, 2021, https://www.britannica.com/technology/megaron.

naos section. The addition of the semi-circular niche is the only interpreted part of the plan. The rest is exactly the same as the archetype of the double anta temple. Temple of Saturn in the Plan of the Roman Forum has the same spatial quality as the plan in the drawing, including the addition of the semi-circular niche to the double anta. [Figure 3.4-7]

There is a vaulted ancient temple plan in the upper part of the tholos plan, having a similar spatial organization with Basilica of Maxentius and Constantine, an ancient building in the Roman Forum, which can be seen in Circus Maximus Ancient Rome Map. Unlike the Basilica of Maxentius and Constantine, the plan does not have apses on the sidewalls. The vestibule part on the right-hand side is not be included in the vaulted ancient temple plan in *Plan Game*. In the original vaulted ancient temple archetype, the entrance is on the longitudinal facade. However, there is a reinterpretation in the position of the entrance in the plan drawing in *Plan Game*. It is positioned to the transversal facade probably to have a relation with the open courtyard and preserve the spatial influence and singularity of the tholos in the semi-closed space. [Figure 3.4-8]

These architectural precedents are some of the main typologies that can be frequently encountered in city plans throughout the history of architecture. In some sections, these typologies and examples of the precedents in the plans have been altered to establish a better relationship with the surrounding spaces or due to the participant's objective to combine architectural precedent with different architectural operations. It is also possible to observe that sometimes a random decision-making process, the cause of which is not understood, generates this change in the plan by the participants. However, thanks to this reason, the observers can distinguish and experience different interpretations of architectural typologies that are familiar from the ancient city plans. In addition to these architectural typologies, the drawing also includes open and closed spaces created by combining more than one plan. Thus, different spatial definitions are composed using some diverse architectural elements and precedents. Still, these numerous plans work together in *Plan Game*, creating harmony, and the observers can experience this coexistence.

These serial plans can be listed as follows: at the top left, there is a complex comprised of stoas, basilicas, and an open portico including freestanding colonnades to define the border of the space. In this example of serial plans, the architectural plans are associated with each other by adding a circulation element like a staircase and positioning a semi-open courtyard between the structures. Also, this is the part where the textural differentiation on the ground surface is the most apparent in the plan. Along with diverse typologies, the four different types of hatching are included in the plan drawing. These spatial complexities are common in the city plans of ancient Rome and Pompeii, where different typologies can be experienced together, especially in Campus Martius and Forum Holitorium. [Figure 3.4-9]

At the right-hand side of the baroque church, there is a series of closed and semi-open spaces arranged side by side. An example of this series can be found in Forum Julium. Besides, there is a gradual change in the openness and closeness between the spaces. The plan, which includes a staircase and rectangular niche at the upper part, is a closed space. Then, there is a semi-closed space that is defined by freestanding colonnades. There is an almost entirely open space at the end of this series by having only a built ground and staircases. Maybe it is intended to experience this change in the definition of space by the users in the fictitious city plan. An open public space is defined by locating the plans across the double anta temple and the crosswise of the baroque church. Also, the entrance of each plan is positioned as looking towards this paved public piazza to increase the publicity of the courtyard. [Figure 3.4-10]

There are freestanding colonnades, semi-open and closed common spaces at the middle of the drawing, including the atrium, Roman peristyle garden, and impluvium, which is the sunken part of the atrium located at the lower part of the plan drawing. By the way, in the impluvium part, the water element is indicated by using wavy hatching. These kinds of common spaces are frequently encountered in domus in the Ancient Roman Period. Actually, in the original organization of domus, the peristyle garden, and the impluvium are located in different courtyards. Also, the open common spaces are surrounded by private and semi-closed common spaces like fauces, tabernae, cubiculum, alae, posticum, and triclinium. However, the archetype

is reinterpreted by drawing the peristyle garden and the impluvium in the same courtyard. Besides, there are only two semi-closed spaces around the courtyard which are probably posticum and alae. The common space with an entrance from the outside is called porticum, and the space composed of semi-circle and square forms is called alae. Instead of the private and semi-closed space, the courtyard interacts with the vaulted ancient temple and tholos plan. Thus rather than being a common courtyard, it can be correlated with more like a public space definition. [Figure 3.4-11]

The temple plans, which have similar typological features with the Octastil Dipteral basilica, are located in the lower-left corner of the drawing by reinterpreting the direction of the entrance part. The orientation of the volumes in the plan resembles the Palazzo Pamphilj plan in the Nolli Map, but its archetype is almost totally different. It is not usual to locate the pronaos, a vestibule at the front of a classical temple, onto one side of the temple instead of its front. The prostyle portico, which is oriented in another direction and perpendicular to the main basilica volume, has columns running across the entire front after the grand stairs. The term dipteral means having a double row of columns on each side as the inner colonnades. However, after half of the plan, the rows of colonnade decrease to one and start to be peripteral. To underline this alteration, the basilica also has an opening in this threshold. Unlike the Octastil Dipteral basilica archetype, the plan does not include outer colonnades surrounding the main volume. Besides, the Octastil Dipteral basilica is a quite widely used archetype in Ancient Greece. [Figure 3.4-12]

Therefore, *Plan Game* combines many architectural precedents in diverse periods and a cross-border reality. These rich spatial associations create an unpredictable fictional city plan with the help of innate knowledge of ancient city plans. The interpretation, extension, and merging of the precedents are some of the general architectural operations performed on the collaging process in the game. Since accuracy is not the objective of this game, participants are not expected to draw precisely the same plan. The main feature that makes this game precious is its wide range of contingencies. At this point, ambiguousness plays the leading role in

obtaining creative process and visionary outcomes in this sophisticated round game. In addition, *Plan Game* includes architectural elements and treats the urban landscape as a design element for the sake of composite city plan and reading the plan as a whole. In order to obtain an indiscrete urban tissue in the city plan, the participants merge the architectural precedents with the landscape elements like vestibules, alleys, streets, piazzas, obelisks, and pools. The different types of hatchings in the drawing reflect the hard and soft ground landscape elements and illustrate that the outdoor spaces are also included in the design process. Thus, a composition in which elements of architecture and urban environment are used in balance is obtained in *Plan Game*.

3.4 Architectural Precedent in Relation to *Plan Game*

Precedent, which can be defined as a pre-existing example in a similar circumstance, is a crucial term in architectural education for the utilization of design solutions.[110] Analyzing architectural precedents provides new sources of knowledge for further studies and encourages design decisions.[111] Besides, precedent should not be regarded just as examples of architectural history dated back to old times. Instead, it is a trans-historical concept and has the power to affect the current projects.[112] In order to generate knowledge and explore the generative potential of architectural precedent, it is important to learn from existing precedents and reflect those observations in the design processes. Hence, observing relevant aspects in precedents gives a chance to adapt valid solutions to recent design problems. John Hancock indicates two ways of benefitting from architectural precedents; the first is

[110] Ömer Akın, "Case-Based Instruction Strategies in Architecture", *Design Studies 23* (2002): 411.
[111] Heves Beşeli, "Reconceptualizing the Architectural Precedent: Textual Models of Reading" (Ph.D. diss., Middle East Technical University, 2015), 5.
[112] John E. Hancock, "Between History and Tradition: Notes Toward a Theory of Precedent", *The Harvard Architecture Review 5* (1986): 65.

selecting a portion from the precedent to apply it to the current design problem, the second is analyzing the design approach of the existing example to use it more effectively.[113] Both viewpoints reflect that precedent is a trans-historical term, and it influences the design problems of the current architectural tasks without the limitations of time.

Colin Rowe, who is one of the prominent theoreticians and architectural educators of The Texas Rangers, defends the significance of benefitting from precedent as a teaching methodology in design studios. Also, Rowe perceives precedent as an essential design tool that instrumentally leads the design process: "I am not able to comprehend how anyone can begin to act (let alone to think) without resorting to precedent."[114] In this regard, Rowe asserts that teaching and learning architecture through precedents is valuable. As we can read from the texts of Colin Rowe's students, Rowe came to the studio with architectural books in his hand, and even for the solution of staircase problems, he benefitted from the various approaches of precedents.[115] According to meeting notes at Cornell University, Rowe defines architectural precedents as a "dictionary of architecture" in which architects make sentences from existing architectural works.[116] Therefore, precedents constitute the vocabulary of architecture, and architects or architecture students can use them to apply certain approaches to present tasks. Rowe's teaching focuses more on the analysis of precedents and the urban texture than on the architectural program. Instead of defining architecture through abstract forms, or modernist's approach of tabula rasa, Rowe adopts architectural precedents to lead other design processes.[117]

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[113] Hancock, "Between History and Tradition: Notes Toward a Theory of Precedent", 67.
[114] Colin Rowe, *As I was Saying: Recollections and Miscellaneous Essays: Cornelliana*, ed., Alexander Caragonne, (Cambridge, MA: The MIT Press, 1999), 368.
[115] Caragonne, *The Texas Rangers: Notes from an Architectural Underground*, 210.
[116] Esin Kömez Dağlıoğlu, "Karl Popper's Architectural Legacy: An Intertextual Reading of Collage City", *Middle East Technical University Journal of the Faculty of Architecture*, Vol. 33, No. 1 (2016): 116.
[117] Colin Rowe, *As I Was Saying: Recollections and Miscellaneous Essays, Vol. III: Urbanistics*, ed., Alexander Carragonne, (Cambridge, MA: The MIT Press, 1996), 172.

The process of analyzing precedents also saves lots of time by preventing the designer from the rediscovery of the world of designing.

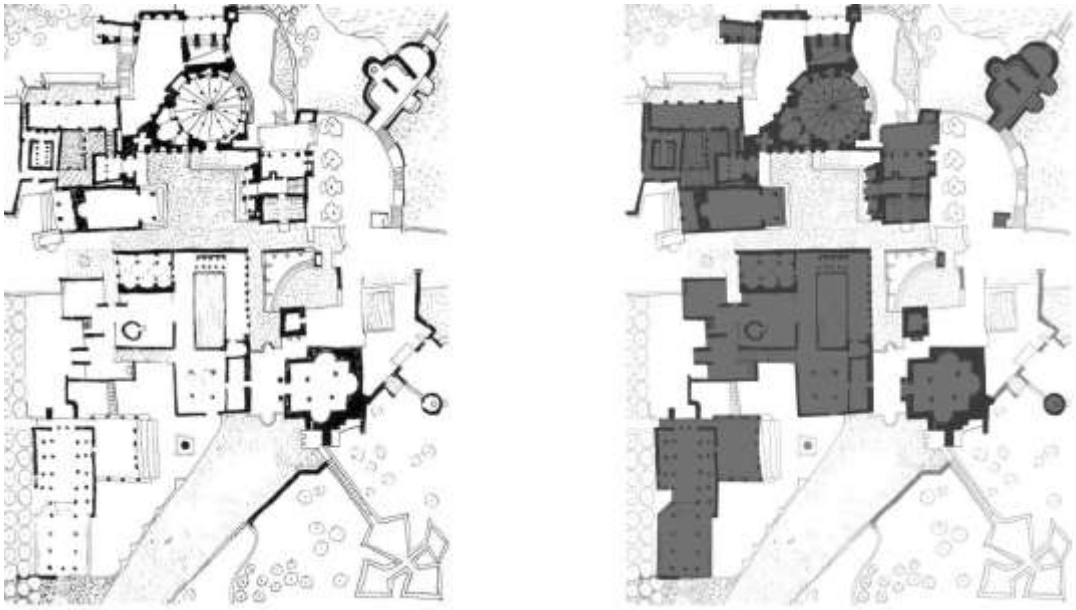

Figure 3.5 *Plan Game*. The Original Representation Technique of *Plan Game* on the Left. Figure-Ground Version of the Drawing on the Right. [Looking at Cities, "The Plan Game: The Origins of Collage City", last accessed May 8, 2021, https://lookingatcities.info/2018/09/05/the-plan-game-the-origins-of-collage-city/.]

Rowe was one of the initiators of *Plan Game*, in which precedents play a significant role in the composition. *Plan Game* is an exercise based on combining the plan drawings of precedents from all the times and styles. To indicate the architectural features of the precedents, plan drawings are drawn with their interior organizations. Therefore, it contains typological information of the built environment instead of having footprints as in the figure-ground plans. [Figure 3.5] In this exercise, the most significant point is the chance to observe the spatial organization of the architectural works in the urban context. Hence, in *Plan Game*, participants can introduce how the buildings are positioned relative to each other by giving information about spatial organizations of the interiors. Thus, different from the figure-ground plans, the fictitious drawing of *Plan Game* may illustrate potential relations between the interior of the buildings and their relation to the public spaces.

In addition to favorable aspects of *Plan Game* in revealing spatial features of architectural works in making of the city or enabling the dissolution of the border between architecture and urban spaces in the city composition, this exercise also has some shortcomings. In order not to be a blind admirer, it is crucial to note the inadequate aspects of the game besides its generative potentials. Firstly, *Plan Game* is played by montaging architectural plans on a piece of paper which means it is a two-dimensional drawing exercise. Therefore, it includes no information about the third dimension, and the observers and players can solely perceive one horizontal section of the architectural spaces. The drawing is quite precious in terms of spatial variety and montaging fragments of precedents in that section. The exercise is also very effective in observing the relationship between the architecture and urban fabric in the city composition because plans represent the ground levels. However, there is an ambiguity about what is going on in other section planes and how the spatial composition alters in the third dimension. These points are all open to interpretation since the drawing is composed of only one horizontal section. This situation, unfortunately, restricts experiencing diverse spatial organizations of the architectural works at different levels due to including one plan drawing by using orthographic projection technique in *Plan Game*.

Besides, *Plan Game* has some sort of inconclusive approaches in the discourse of urban morphology because of the two-dimensional quality of the drawings. Therefore, it is hard to comprehend the physical patterns in the urban tissue of a city without having information about architectural forms in the third dimension. There are some spatial pieces of evidence about physical forms, the formation of urban spaces, and street patterns at the ground level. However, they are not enough to deduce an overall urban morphology analysis of the city. In this sense, *Plan Game* can be interpreted as a creative architectural exercise with a weak stance to interpret urban morphology. Instead, it purposes to represent the diversity in the spatial characteristic of the architectural works in the city composition. Nevertheless, having some shortcomings or possessing certain aspects that can be improved, no one can deny that *Plan Game* is a creative architectural exercise to go beyond the

conventional designing methods and experience different spatial organizations of precedents in the city.

CHAPTER 4

RECONSIDERATION OF *PLAN GAME* AS A PEDAGOGICAL METHOD

Plan Game, which the Texas Rangers play to experience new perspectives and design approaches in the mid-1950s, was later played as an in-class exercise among architecture students as a part of pedagogical architectural education in various design studios. The purpose of this exercise can be to encourage students to experience the outstanding results of designing together, enable them to analyze architectural precedents in the design history, and learn new approaches from them. This exercise also has the power to direct students to comprehend that collective production involves unimaginable processes which end up with unexpected results compared to the composition produced by individuals. Hence, *Plan Game* is a quite significant architectural exercise that can improve students' thinking about architecture and help them learn how to benefit from architectural precedents properly in design processes as an instrument of architectural design. It also clarifies the relation between the examples of architectural history and current design problems. The exercise makes students experience the freedom of design without the limitations of reality and get familiar with the commonly used architectural typologies.

Actually, architecture is part of a collective design field of profession that is not comprised of designing alone and then producing this design again oneself. As indicated by Richard Rogers, it requires collaboration, "Architecture is too complex for just one person to do it… We all bring different things."[118] Joshua Prince-Ramus

[118] Nicholas Wroe, "Richard Rogers: 'The Street is Where Society Comes into Itself'", interview with Richard Rogers, *The Guardian*, 11.07.2013, last accessed May 20, 2021, https://www.theguardian.com/artanddesign/2013/jul/11/richard-rogers-arts-interview.

also defines architecture through collaboration rather than an individual contribution, "Architecture is not created by individuals. The genius sketch... is a myth. Architecture is made by a team of committed people who work together, and in fact, success usually has more to do with dumb determination than with genius."[119] Thus it is significant to learn how to handle the design process with different voices during architectural education and comprehend architecture as a collective action. That is why design studios include many group works in the curriculum of the architectural courses.

In addition to direct students to cope with the collaboration problems, this methodology also opens the ways of experiencing diverse design processes and a varied range of creativity in the end results. Instead of dealing with a design problem alone, working together with other people enriches design proposals and allows the current design problem to be viewed from different angles. Through this way, the end results obtain the opportunity to include more than one design approach, which ensures innovative and radical suggestions due to the participation of diverse minds. Therefore, *Plan Game* is a prominent architectural work in design history that can reflect this collective environment to architecture students.

Plan Game can seem like an elementary exercise, drawing the plans of architectural precedents to generate an urban composition; however, the blank paper includes lots of possibilities. The end-products of *Plan Game* do not need to be convenient for city design proposals, which are directly applied to cities. However, what matters is that this practice involves a creative design process. Instead of constant design solutions, these kinds of exercises are crucial to provide unforeseen possibilities to architects without any restriction. Furthermore, to avoid the prevalence of the conventional city planning approach, these kinds of exercises can be used as a

[119] Jena McGregor, "The Architect of a Different Kind of Organization", *Fast Company Magazine*, (June 2005), last accessed May 20, 2021, https://www.fastcompany.com/52933/architect-different-kind-organization.

strategy to observe new unpredictable design solutions, which also increase the creativity level of the design process.

It is crucial in architectural education to learn from existing architectural solutions and reflect them to new design problems by reinterpreting the different approaches that architectural precedents contain. In this respect, it is not necessary to reinvent the world of design and architecture, which are already in existence.[120] Instead, revealing the generative potential of architectural precedents and benefiting from them in the design process are significant opportunities that the history of architecture offers. The method of revisiting the architectural precedents does not mean repeating the past design solutions or reviving the historic architectural styles. Instead, the analysis is intended for exploring archetypal approaches and generating new knowledge through the reading of the precedents.[121]

Besides, analysis of precedents is an opportunity to enhance the way of thinking about architecture and observe the generic solutions towards design problems that transcend the limitations of time and geography. It is also valuable that sometimes the reading of the precedents turns into the concept of misreading, which causes more inspiring and unexpected observations and new potentials from the plan reading. Since in the reading process of the plans, the architects' intentions towards the design decisions are not known beforehand in many times, the reader can analyze something more than the existing formative idea. In this way, the generative potential of the architectural precedent can be explored.

Plan Game provides a design field that promotes a collective environment and emphasizes the importance of architectural precedents in the design process and the making of the city. Therefore, benefiting from the teachings of this historical game

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[120] Heves Beşeli, "Reconceptualizing the Architectural Precedent: Textual Models of Reading" (Ph.D. diss., Middle East Technical University, 2015), 5.
[121] Roger H. Clark, Michael Pause, *Precedents in Architecture: Analytic Diagrams, Formative Ideas, and Partis,* (New Jersey: John Wiley & Sons Inc., 2012), v.

in the architectural design studios offers a significant chance to broaden the horizons of the architecture students. The exercise is composed of the assemblage of the architectural fragments that enable participants to observe new spatial organizations and led them to give respond to the already existing spatial definitions in the drawing. Hence, the design process allows students to explore unexpected spatial confrontations and learn the importance of spatial relations in the process. Based on these advantages, it is sensible to benefit from this historical game in the architectural design studios. Depending on the archive researches, it was observed that *Plan Game* was used in the architecture departments of some universities. There are three examples found in which *Plan Game* is used as a pedagogical method in design studios in architectural history.[122]

4.1 Bernhard Hoesli's Assignment at ETH Zurich

The members of Texas Rangers, who made radical changes in the architectural design curriculum at Texas University in the 1950s, continued their academic studies in various universities in different countries in the following years. Thus, instead of the conventional methodologies that emphasize the end product, they focus on architectural precedents, urban context, and the design process to the architecture departments of many universities.[123] Besides, the faculty members found the opportunity to spread their approaches, adopted during the period spent together at Texas University. John Hejduk and Bernhard Hoesli, who are among the members of Texas Rangers, have continued their work by taking part in the academic staff of

[122] These examples are only the ones found by the author of the thesis from various archives. Maybe there are more in-class exercises given concerning the teachings of *Plan Game*. Some of these examples are not readily available in other sources.

[123] Federica Soletta, "The Texas Rangers: School of Architecture, University of Texas Austin" in Radical Pedagogies Research Project, (Copyright: Princeton University School of Architecture, 2012), last accessed February 18, 2021, https://radical-pedagogies.com/search-cases/a17-texas-rangers-school-architecture-university-texas-austin/.

ETH Zurich (Zurich Federal Institute of Technology) since 1959 after leaving the University of Texas.

Hoesli attempts to change the strict design curriculum prevailing at ETH Zurich in line with the innovative pedagogical methods he has experienced at Texas University.[124] Thus, the design curriculum implemented in architecture studios at ETH Zurich in the 1960s can be interpreted as a reflection of the pedagogical process experienced by the members of Texas Rangers. Within this period, Hoesli works on in-studio exercises to focus on interactive approaches in solving architectural problems, emphasizing spatial organization instead of architectural form. Among those studies, there is also an exercise written based on the principles of *Plan Game* by Bernhard Hoesli at ETH Zurich.

Hoesli prepares this exercise to be given to architecture students of the 1983-84 academic period together with the other studio coordinators: Jürg Jansen, Hansueli Jörg, Luca Maraini, Hanspeter Stöckli.[125] A total of two days is planned for this work, which can be defined as an in-studio exercise that does not span a long time. The project description begins by referring to the article "Gradual Formation of Thoughts During Speaking" by Heinrich von Kleist, and details are given in three chapters. In the first part, it is mentioned that the exercise in question will be a collective work, and the fictitious city plan will be obtained gradually by the participants. Thus the students will contribute to the game one by one. In the second part, it is stated that each member of the study group, consisting of four to six students, will draw a floor plan respectively until the shared drawing paper is filled. Thus the fictitious city plan will be obtained at the end of this process.

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[124] Smilja Milovanovic-Bertram, "In the Spirit of Texas Rangers", *College of Design Sponsored Conferences*, Georgia Tech Library, (March 2008), last accessed February 22, 2021, https://smartech.gatech.edu/handle/1853/29118.

[125] The indicated in-class exercise sheet and student studies were found among the documents of Bernhard Hoesli in the gta Archives.

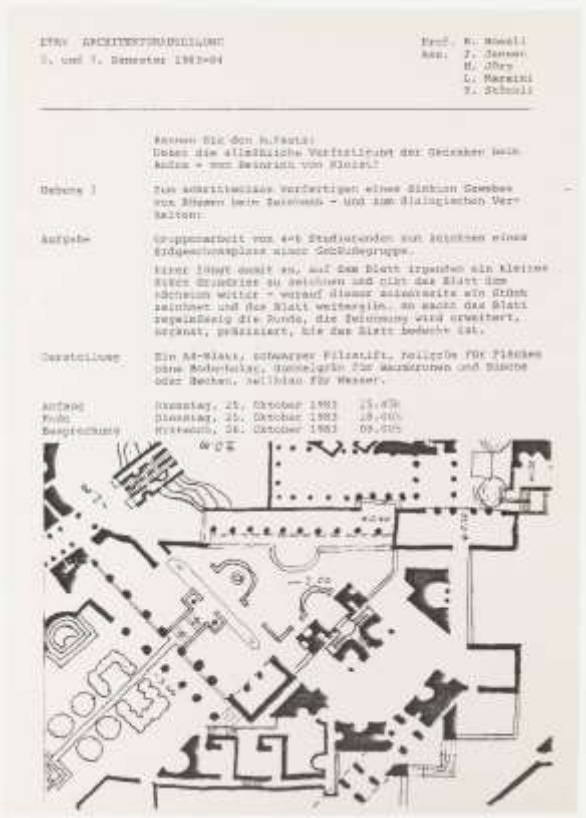

Figure 4.1 Project Description of the In-Studio Exercise Given in the 1983-84 Academic Period at ETH Zurich. [The visual is found from the gta Archives and reprinted courtesy of the gta Archives.]

The last section states that A4 paper will be used during the study. The built environment should be indicated by using black color, the untreated surfaces are by light green, the trees in the plan are by dark green, and a blue felt-tip pen should indicate the water element. The exercise given in the Cornell contains the intellectual background of *Plan Game*, which is a conscious preference to turn this game into a pedagogical method. Within the scope of this work led by Hoesli, there are six student projects, founded from gta Archives in Zurich, which were produced in accordance with *Plan Game*. The projects reveal the pedagogical reflections of the logic of this inspiring work. Furthermore, a visual on the project description part in the exercise sheet in the same archive serves as an example of how *Plan Game* is played. Therefore, based on this visual, it is possible to interpret that *Plan Game* exercise may have been given within the scope of the studio in previous semesters.

The built environments include very few closed spaces in all student projects compared to the only known example of *Plan Game*. Generally, it consists of semi-open and open spaces associating with the public spaces in the drawing. Therefore, it may be more challenging to distinguish architectural precedents and read different typologies in these drawings compared to *Plan Game*. Benefitting from different grid systems in the design process, which is very limited in *Plan Game*, can be interpreted as a dominant approach in all student projects. The space definitions arising from overlapping multiple grid systems have an important impact on the planning process. At the same time, integrating circular and orthogonal forms obtained by the intersection of perpendicular surfaces is a common approach that is also valid in the original *Plan Game* drawing.

In addition to the staircase drawings in *Plan Game*, ramp and elevator plans are also included in the student projects as vertical circulation elements. Besides, different types of stairs are used in the drawings, including straight, U-shaped, and half-circle stairways. Level differences are also indicated, which can be easily read in the plan drawings. This approach strengthens the spatial organization, and the plan drawings are prevented from having only one dimension. Unlike the approach adopted in *Plan Game*, it is possible to observe a dominant central organization in the three student projects since the other plan drawings develop around the space defined in the center. However, the other three projects adopt a similar design approach with *Plan Game*, approaching the whole area equally and not bringing any architectural precedent to the fore.

The water element is used as an essential design element in all projects except one of them. Rather than being a small landscape detail, it defines surfaces and gets integrated with the built environment. At the same time, the plans include using the water element in the built environment in a controlled manner, and it is used in the landscape areas without intervention. Contrary to this approach, the soft landscape is not included in the drawing as a design element in most student projects. Instead, they are usually represented by painting some of the remaining open spaces as light green. Additionally, it is crucial to examine the architectural precedents and

typologies included in the drawings to uncover how students benefit from them in the overall organization.

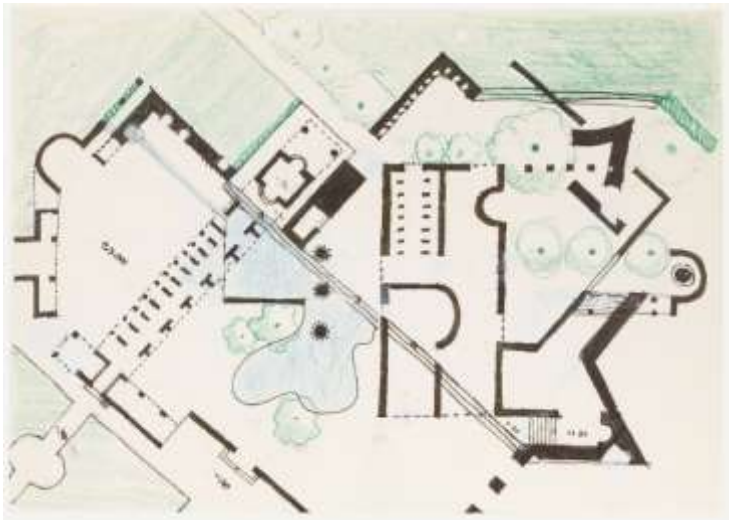

Figure 4.2 First Group Work in gta Archives Made within the Scope of the In-Studio Exercise Given in the 1983-84 Academic Period at ETH Zurich. [The visual is found from the gta Archives and reprinted courtesy of the gta Archives.]

In the first student project, it is possible to read the continuity in the open spaces and architectural plans, besides the different architectural approaches. Also, two main grid systems are dominant in the drawing, one of them orthogonal to the picture plane, and the other is angled. There is a typical Roman basilica plan positioned at an angle of 45 degrees at the top middle. Basilica Ulpia in Trajan's Forum can be the architectural precedent of this plan. The same axis continues with the plan of a stoa, which is getting interaction with the water element. The water surface covers a part of the stoa plan. Due to this interaction, physical continuity gives way to visual continuity. The plan of stoa is used as a threshold in the plan regarding the usage of the water element. After this architectural plan, the water element is taken under control in a water channel extending to the wall on the left upper edge of the plan. Just below the stoa plan, a circular public plan square resembles Saint Peter's Square in Vatican City. [Figure 4.2]

Besides, the walls in the drawing are also treated diversely. There are some walls in which the architectural operation of carving out is used to obtain specific spaces inside the wall in the drawing. In this way, hollow structural forms in the wall are achieved by differentiating themselves from the others. This architectural treatment on the wall resembles Louis Kahn's approaches in Korman House or the exaggerated version in British Castle nestling of spaces into thick outside walls. There are also many semi-circular niches used in the drawing to define spaces. As a different approach, an obelisk is located in the semi-circular niche on the right-hand side. Also, there is a rectangular hall having 2-row columns inside positioned close to the center of the drawing. Although they are possibly different in function, Arsenal in the Plan of Agora of Athens can be an architectural precedent of this spatial organization. [Figure 4.2]

Figure 4.3 Second Group Work in gta Archives Made within the Scope of the In-Studio Exercise Given in the 1983-84 Academic Period at ETH Zurich. [The visual is found from the gta Archives and reprinted courtesy of the gta Archives.]

Linearity is quite dominant in the second student project. Also, the effort of relating the forms in a linear organization by benefiting from the reference lines can be observed from the drawing quickly. Unlike the other student projects, contour lines are integrated at the top right instead of flattened topography. The drawing includes some basic space definitions at the bottom right with two intersecting lines and one

point opposite it. Another example of this basic space definition, four points are placed on each corner of the square in the student project to define a space. These spaces defined by four points are drawn repeatedly in the same axes starting from the contour lines on the right to the bottom left part of the drawing. The space at the top middle of the drawing may be an example of a cross-in-square archetype, but it was drawn without side walls. [Figure 4.3]

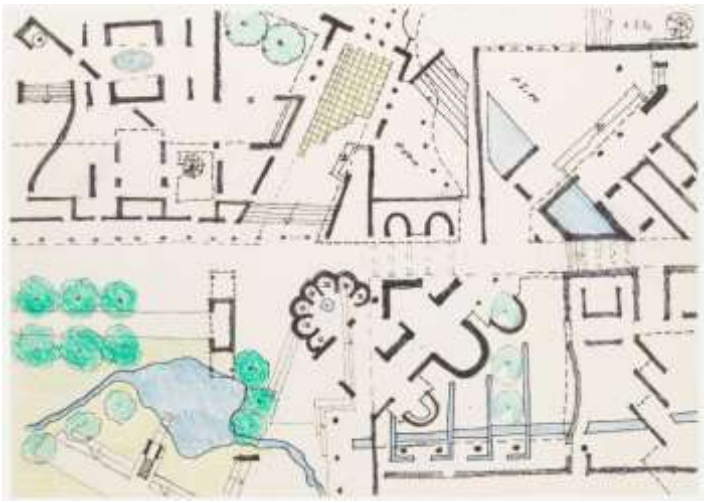

Figure 4.4 Third Group Work in gta Archives Made within the Scope of the In-Studio Exercise Given in the 1983-84 Academic Period at ETH Zurich. [The visual is found from the gta Archives and reprinted courtesy of the gta Archives.]

The student project is divided into two main parts by positioning the transition space, working as a city-scale corridor, in the middle axis. Thus, the spaces on the upper and the lower parts of the drawings work separately. The bottom left part of the drawing includes mostly soft landscapes by involving the minimum built environment. Also, just above the water element, another open transition space is defined starting from the formally reinterpreted megaron plan. The water is controlled in the other parts of the drawing and included in the project in relation to the existing spaces. The center of the drawing contains circular and semi-circular forms dominantly. At the center, there is also a complex including many tholos plans, which involve obelisks in each center of the tholos. [Figure 4.4]

There are two main grid systems used in the project, the orthogonal grid and the angled one. The spaces produced by the intersection of these two grids have a significant effect on the composition. At the bottom part of the drawing, a partial plan of a cross-in-square basilica is not seen in total, whose slab is divided into diagonal units. Also, there are two megaron plan drawings positioned reciprocally at the top right. The amphitheater at the left has not been seen before in the other student projects. Although amphitheaters have a crucial mission and value, especially in Roman Architecture, to organize the urban fabric in ancient city plans, it is interesting that this spatial organization is used only once in this drawing in student projects. The plan has a semi-circular form, and behind the highest seating section called summa cavea, there are freestanding colonnades that define the boundary of the amphitheater. Roman Theatre of Palmyra can be the architectural precedent of this plan in terms of having semi-circular form and colonnades behind the summa cavea. [Figure 4.5]

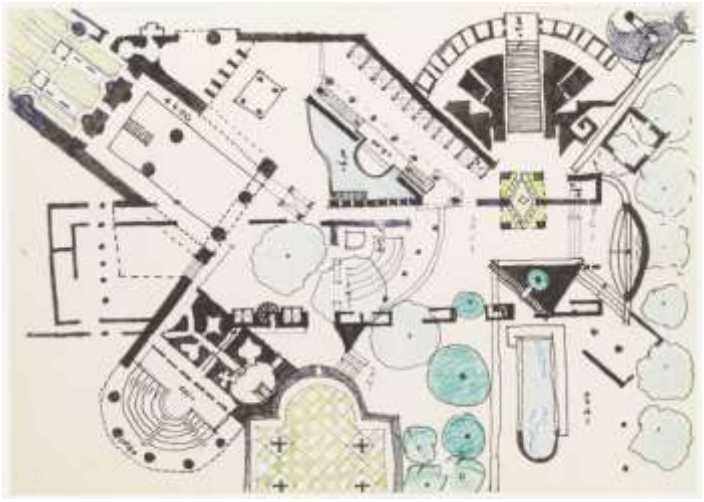

Figure 4.5 Fourth Group Work in gta Archives Made within the Scope of the In-Studio Exercise Given in the 1983-84 Academic Period at ETH Zurich. [The visual is found from the gta Archives and reprinted courtesy of the gta Archives.]

The drawing also includes some figurative symbols like yin yang drawn at the top right. In addition, the spaces working as backstage of the amphitheater have the form

of playing card figures, club, diamond, heart, and spade.[126] In fact, it is not common to observe these figurative aspects in architectural studies. Hence, it is hard to comprehend the objective of these illustrations. On the contrary, gathering all of the service units into one axis is used frequently to organize the spaces in many drawings. This design decision can be seen in the longitudinal axis above the cross-in-square basilica and at the diagonally positioned part above the triangular water pool. Also, the circulation and transition spaces positioned in the diagonal axis include the freestanding colonnades to support its spatial definition. Similar to the first student project, there are hollow structural forms in some thick walls obtained by carving out to define some spaces inside. Examples of this approach can be seen at the top left and top right parts of the drawing. [Figure 4.5]

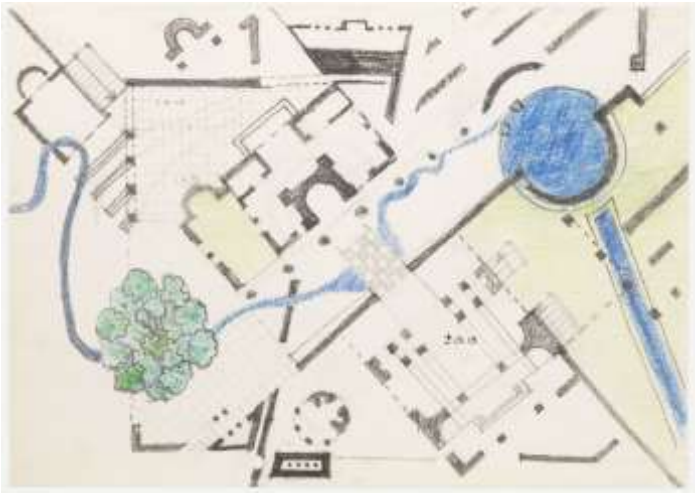

Figure 4.6 Fifth Group Work in gta Archives Made within the Scope of the In-Studio Exercise Given in the 1983-84 Academic Period at ETH Zurich. [The visual is found from the gta Archives and reprinted courtesy of the gta Archives.]

In the fifth student project, the diagonal section in the middle, starting from the bottom left to the top right, includes the main transition space and divides the

[126] It is assumed that the figures represent the four fundamental components of the Middle Ages: church, military, agriculture, and the merchant class.

drawing into two parts. Some reference lines can be read in the architectural spaces in both parts. Thus, the parts do not work separately due to spatial continuity. For instance, at the center of the drawing, the width of the open space intersecting with the water element takes reference from the radius of the exedra, and this reference continues till the end of the bottom part. The drawing contains two rectangular forms with semi-circular niches at the top right parts. There are also two different usages in the slab, soft and hard, separately. An architectural example of this organization can be observed in the municipal office plan in the Pompeii Forum. Besides, in the upper part of the drawing, two megaron plans are reinterpreted in terms of form. Semi-circular architectural recesses, which are called exedra, are commonly used in this drawing. Almost all of them support their spatial definition by using freestanding colonnades positioned just at the end of the semi-circular form, like in the west and east exedras of Petra Great Temple. [Figure 4.6]

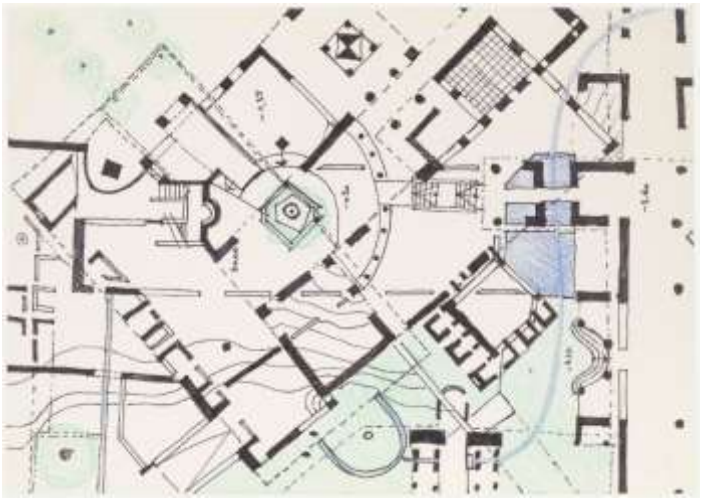

Figure 4.7 Sixth Group Work in gta Archives Made within the Scope of the In-Studio Exercise Given in the 1983-84 Academic Period at ETH Zurich. [The visual is found from the gta Archives and reprinted courtesy of the gta Archives.]

The last student project is quite different from the others, and it is hard to notice the architectural precedent or typologies taking part in the drawing. It mainly contains semi-open and open urban spaces instead of the plan of architectural precedents. Besides, as the second project, the contour lines are integrated into the drawing

instead of having a flattened site. Freestanding colonnades are included in the drawing dominantly to define public open spaces. The drawing mainly contains basic space definitions using transecting lines and point positioned just opposite the lines. At the same time, compared to other studies, dashed lines are another method used in drawing quite a few to indicate the built environment at the upper elevation. [Figure 4.7]

Although it is a two-day exercise, very creative works emerged that directed different actors to produce and fictionalize together and force different urban and architectural elements to think in relation to each other in the fictitious composition. With this short-term exercise, they have a chance to experience different ways of producing "together". Actually, the word "together" used in the sentence describes two different outcomes of the exercise. They take part in a design process with the participation of more than one person and experience new ways of making architecture and the city together. At this point, it cannot be denied how valuable it is that Hoesli was able to transfer his pedagogical and architectural gains directly to students, as he was already a member of Texas Rangers. In this way, the exercise reveals an effective method of how *Plan Game* can be integrated with the architectural design studios as a pedagogical tool.

4.2 Mark Morris' Assignment at Cornell University

The second example of reviving *Plan Game* in the design studio is the in-class exercise given by the Visiting Associate Professor, Mark Morris, at Cornell University in 2012.[127] This exercise, called *Exquisite Conurbation* by Morris, was played by architecture students for a semester. Also, in the explanation part of the assignment, Morris references *Plan Game* to clarify how this game is played and its

[127] Mark Morris, "All Night Long: The Architectural Jazz of the Texas Rangers" in *Drawing Architecture*, Helen Castle & Spiller, Neil eds., (London: Academy Press, 2013), 26.

objectives by naming *Plan Game* as Dot the Dot. Morris indicates that "Dot to Dot" or the other name "Connect The Dots" reflects the essence of the game, which means unless all the dots be connected and forming a whole by the collective participation, the game cannot be complicated and makes sense.[128] At the same time, he resembles the content and approach of the game to the method of performing jazz music. Thus, he gives one more proper name to the game as architectural jazz.[129]

Morris admits that he has had some doubts about revisiting the game after such a long time and in an era of the prevalent influence of computers in architectural education.[130] As the game is intimately based on drawing the plans in freehand, he supposes that students may refuse to contribute this relatively unfamiliar way. However, Morris integrates this exercise into the syllabus of the design studio by taking into account the invaluable experiences that students will gain as a result of the study. Hence, this exercise aims to use the knowledge regarding architectural precedent as a research and design tool. The problem of this exercise does not dwell on drawing the plans aesthetically or adequately. Instead, the objective of this game encourages design speculations which directs students to ponder over new design approaches to speculate the architectural plans. Thus, Morris decided to direct students to play this game again as a design studio project to reveal the possible potentials that the game contained.

The students used a sketchbook for this assignment, including 3 meters long folded paper and a black ink pen.[131] Different from the exercise given at ETH Zurich by Hoesli, there is no requirement of color differentiation for diverse components of the city plan within the scope of this exercise. Minimizing the required materials in the exercise may cause such a variety in the end products due to increased contingencies. In this way, the boundaries in the drawing become blurry, which makes the

[128] Morris, "All Night Long: The Architectural Jazz of the Texas Rangers", 27.
[129] Morris, "All Night Long", 20.
[130] Morris, "All Night Long", 24.
[131] Morris, "All Night Long", 24.

reinterpretation of the plans easier. According to Morris' observations, some students in the studio worked together to obtain the final fictitious city plan and shared the plans of the architectural precedents among themselves. In contrast, the majority of the students chose to work on the plan alone.[132] At this point, it can be observed that the assignment is given without the limitation towards the number of participants, and the process can be maintained in two different ways: working as a group or alone. These two ways of working include diverse design processes from each other, and the outcome of the assignment is not the same for the students. These two working methodologies include different learning achievements due to the differentiation in handling the design problem.

In both cases, the students can get familiar with the architectural precedents, and they can improve their architectural understanding in terms of spatial organization. However, when a student decides to work alone, the end product has the same design language. The plans can be more related to each other, which is also debatable whether this situation is desired or not. Suppose a group of students works together and responds to the contributions of the others. In that case, the fictitious city plan has a chance to involve a variety of design approaches in terms of spatial organization. The plan can be generally dealt with in different ways, and the differentiation between fragments can be read from the end product. Besides, in the design process, students can learn new viewpoints due to collaboration and enhance the talent of collaboration. If the two approaches are compared, although working in

[132] Morris associates the students, who work alone without joining a group, to Rainer Jägals, especially with his sketch called "City Dream Fantasy or Vision". In addition, Colin Rowe also gives reference to Jägals' sketches in "Program versus Paradigm" essay published in Cornell Journal of Architecture in 1981. Jägals was a young designer who benefited from graphical speculations in his works. Due to these speculations, his works share some common points with the Campus Martius and *Plan Game*.
Colin Rowe, "Program versus Paradigm", *Cornell Journal of Architecture*, 1981, last accessed June 18, 2021, https://cornelljournalofarchitecture.cornell.edu/issue/issue-2/program-vs-paradigm.
Morris, "All Night Long", 24.

groups is more difficult to be managed in the working process, the learning outcomes may be more than handling the assignment alone.

In the scope of this research, Justin Wadge, who was a student at Cornell University and one of the participants of the *Exquisite Conurbation*, was reached out, and some questions were directed to Wadge to reveal the details of *Exquisite Conurbation*'s design process. Wadge expressed how effective this exercise was in his architectural education to cope with the larger scales. Wadge potently asserts that the drawing process of architectural precedents helps him to comprehend the spatial organizations in these plans. Wadge also remarks that this exercise allows them to explore unexpected spatial confrontations and encourages them to learn from these diverse spatial interactions in the design process. Wadge states his personal experiences as follows:

> I am a big proponent of using drawing and tracing as a way of seeing, so I think that taking the time to draw through these famous plans has helped me to understand them better. Further, by creating unintended encounters between the different plans, it forces one to decontextualize them and distill what elements could be borrowed for other conditions. By using a series of building plans to construct a design at the urban scale, it allows architects to grapple with larger scales using the language/style/scales we are accustomed to working in.[133]

According to the information provided by Morris, a total of 50 drawings were produced within the scope of this work.[134] Among those works, there are six sketchbooks found in high resolution. Compared to *Plan Game*, let alone benefiting from different hatching methods, even hatching is very limited in student projects. It is also difficult to distinguish the water element in the drawings due to the lack of

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[133] Justin Wadge, interview by author, email interview, 22 June 2021. Published by permission of Justin Wadge.
The questions directed to Wadge are as follows: Could you please explain the learning outcomes of *Exquisite Conurbation*? For instance, has it influenced your architectural design approach? Are there any points that you think to be improved in this exercise? If it is yes, how can it be?
[134] Morris, "All Night Long", 27.

hatching. As in *Plan Game*, only stairs are used as a vertical circulation element in most of the drawings. [Figure 4.8, 4.9, 4.10, 4.11] In most student projects, green areas are not included in the drawings as a design element. Sometimes, they are represented linearly or complement the surface in the remaining open spaces. Contrary to this, each plan drawing has creatively approached the *Exquisite Conurbation* assignment. The drawings are also quite dense in terms of spatial definitions due to various architectural precedents.

The design language and the relationship between architecture and the urban fabric of these works are very different. In some drawings, architectural precedents are quite prominent in which urban elements are not given importance adequately. For example, most of the architectural plans are connected only by streets. [Figure 4.9, 4.13] Whereas in other plan drawings, architectural and urban components are used more balanced way than these works. Even in some drawings, it becomes difficult to distinguish between indoor and outdoor spaces because of the no clear distinction in the boundaries. [Figure 4.12] Therefore, some of the drawings contain quite intensely intertwined plans to increase the interaction between the architecture and urban environment. In contrast, the others prefer only to concentrate on the plans of architectural precedents.

The selection of the architectural precedents in terms of historical periods in the plans also differ in the drawings. Some student projects only included architectural typologies and precedents represented in Ancient Greek and Ancient Roman city plans as in *Plan Game*. [Figure 4.8, 4.12] While one drawing focuses on the Modern Period and the architectural precedents represented in the drawing dominantly consist of plans from the 20th century. [Figure 4.9] In addition to these approaches, there are also student projects in which the architectural plans have traces of Modern, Classical, Baroque, and Byzantine Architecture used in a mixed way. [Figure 4.10, 4.11, 4.13] Directly integrating a part of a historical city planning into the drawing is another method that students performed in the assignment. [Figure 4.12] In some drawings, the plans of the architectural projects of John Hejduk, who is one of the actors of Texas Rangers, are included. [Figure 4.9, 4.13]

The first student project contains two crucial architectural works located in İstanbul: Hagia Sophia and Blue Mosque. Hagia Sophia is a prominent example of Byzantine Architecture which has an enormous influence on the history of architecture due to its large undivided interior space and pendentive dome structure. Blue Mosque belongs to the architectural works of the Late Classical Ottoman Period, which has a central dome surrounded by four semi-domes and an open courtyard. The orientation of Hagia Sophia and Blue Mosque concerning each other has been changed in the drawing. The architectural precedents in the drawings are more related to the closed spaces compared to their existing context. Also, it can be observed from the drawing that some vertical circulation elements work together with the open spaces. The drawing also includes some traces of the plot pattern of the historical peninsula. There is an open courtyard plan with diagonal divisions among the dense building blocks. This plan is similar to the outdoor urban living room, located at the core of the mega-urban complex called JNBY Headquarters, designed by Renzo Piano. The central courtyard is reinterpreted in the drawing, and different from its original design, the level differences are not indicated in the divided open spaces. Thus in this drawing, the spatial conditions of the existing sites are altered, which causes certain speculations towards urban texture. [Figure 4.8]

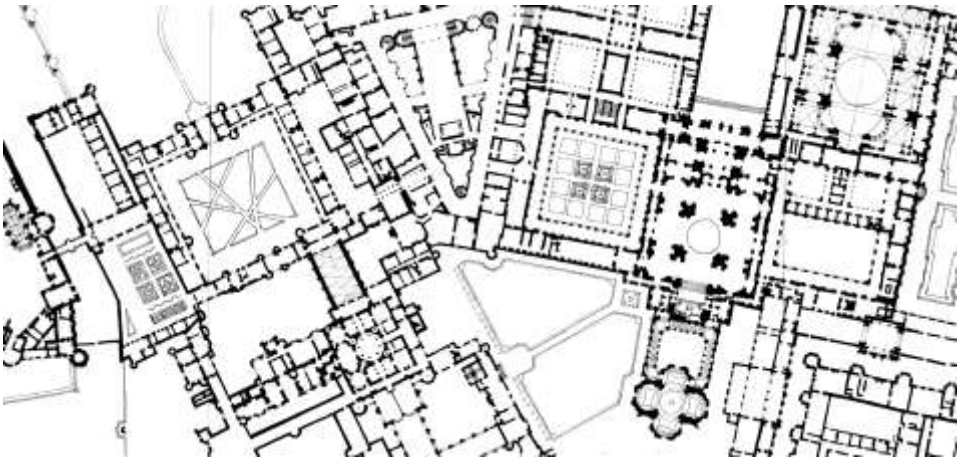

Figure 4.8 First Drawing of Exquisite Conurbation Exercise at Cornell University. [James Hoffman, "Exquisite Conurbation", last accessed May 28, 2021, https://cargocollective.com/jbhoffman/Exquisite-Conurbation.]

On the left-hand side of the drawing, the Guggenheim Museum is drawn as an example of Modern Architecture designed by Frank Gehry. This enormously big complex composed of swirling forms indicates its complexity even in the plan drawing. The left end of the plan, consisting of adjacent rooms, is reinterpreted by changing its formal expression in the middle of the same drawing. Also, one of the streets, which are the most dominant urban elements in the plan drawing, connects the Guggenheim Museum plan with two other architectural precedents: Tuscan Style Roman Temple and an example of (Neo)Classical Architecture, Rotunda. The orientation of these precedents takes reference from the volumes of the Guggenheim Museum. Thus, the plans are associated with each other, even if indirectly. The Guggenheim Museum plan interacts with the transept part, a space that separates the central nave from the sanctuary of an ancient church. The plan drawing belongs to the Cathedral and Metropolitical Church of Christ at Canterbury, an example of Romanesque and Gothic Architecture. In the cathedral drawing, the church treasure space, which stores the historical art belongings inside, is connected to another architectural precedent. [Figure 4.9]

In the same drawing, the Pantheon plan, which becomes prominent as an outstanding pioneer of Roman Architecture, is drawn in the central point where it connects many architectural precedents through the main street that takes dimensional reference of the portico of Pantheon. The drawing includes one of the architectural projects of John Hejduk, a member of Texas Rangers, which is named Wall House II. In this work, Hejduk combined surrealism and cubism movements with architecture in the design process. Instead of reading the spaces as a whole, each of the volumes physically represents itself separated from the others, reflecting the extraordinary approach of Hejduk. Besides the organic formed spaces, linearity is the dominant feature in the project due to the long and narrow central corridor. There is a partial plan drawing of Notre Dame du Ronchamp designed by Le Corbusier at the lower right corner of the drawing. It is hard to categorize this work in terms of architectural movement because it is far away from the typical modern forms, and it is more like a sculpture standing in the urban context. The sacristy, one of the chapels, and the

second entrance of the Ronchamp can be read from the drawing. However, it hardly has a relationship with the other plan drawings. [Figure 4.9]

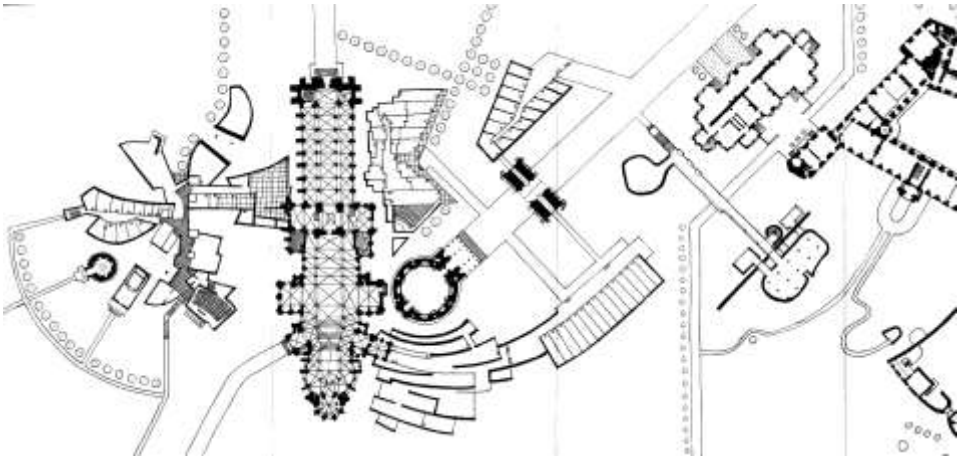

Figure 4.9 Second Drawing of Exquisite Conurbation Exercise at Cornell University. [James Hoffman, "Exquisite Conurbation", last accessed May 28, 2021, https://cargocollective.com/jbhoffman/Exquisite-Conurbation.]

The distinct difference in the design language and approach in the third student project can be observed quite easily. On the left part of the drawing, there are only built environments composed of architectural typologies and courtyards. At the same time, the landscape elements are used very dominantly on the right-hand side of the plan. The landscape design, which is located in the middle of the plan, consists of three different patterns, reflecting the indispensable elements of baroque garden design: symmetry, linearity, and central focus in the organization. The urban element is drawn right part of this landscape design connects two different urban partials by referencing their borderlines. This approach was also used in the 19th century garden plans at the Palace of Versailles to relate the diverse landscape elements lined up next to one another. The diagonal streets drawn at the right part of the drawing divides the site into triangular and tetragonal open areas, which do not contain any semi-closed or closed spaces. [Figure 4.10]

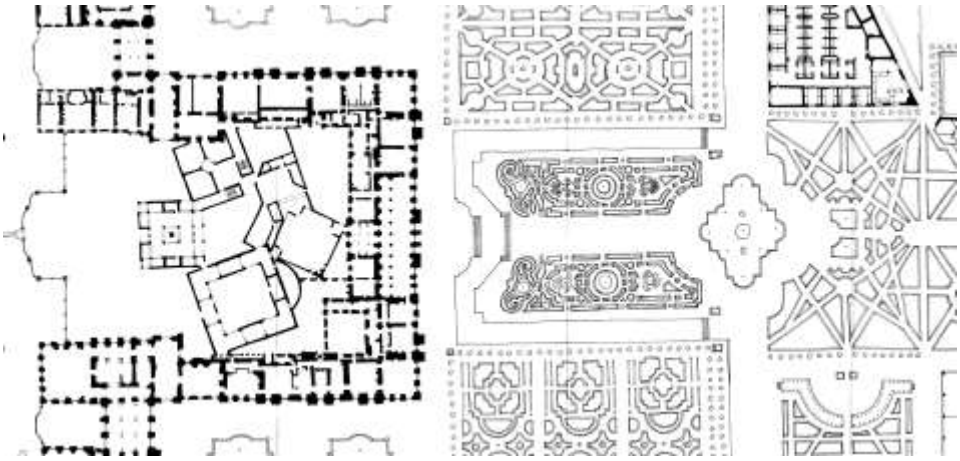

Figure 4.10 Third Drawing of Exquisite Conurbation Exercise at Cornell University. [James Hoffman, "Exquisite Conurbation", last accessed May 28, 2021, https://cargocollective.com/jbhoffman/Exquisite-Conurbation.]

On the left part, there is a dominancy of the built environment due to the perimeter blocks used on a larger scale. This archetype even increases the distinction since it encourages an explicit separation of the private and common spaces from the public realm. The closed spaces lining around the courtyard have minimal interaction with the surroundings, and the courtyard only opens from one side, not the facade viewing landscape designs. Therefore, the semi-closed and closed architectural spaces work within themselves. The open space at its center includes other built environments composed of the rotation and intersection of the square form plans in different angles. This composition of squares is the plan drawing of The Dominican Mother House, designed in 1965 by Louis Kahn. It bears traces from Modern Architecture and but it is an unbuilt project composed of series of plans. Kahn is also known as an architect who tries to relate architectural precedent to contemporary discussions, and in this plan, he influences from the plan of the Chateau de Chambord.[135] Besides, the

[135] Tarang Chheda, "Mother House of the Dominican Sisters", (October 2013), last accessed May 25, 2021, https://www.scribd.com/document/180179921/www-quondam-com-22-2206-pdf.

architectural operations of juxtaposition and jointing play a crucial role in the plan drawing to relate individual components and compose a whole. [Figure 4.10]

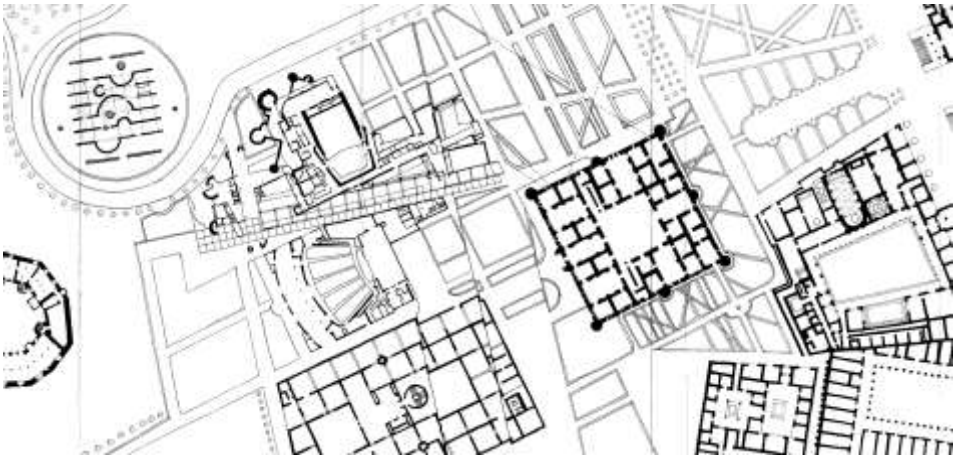

Figure 4.11 Fourth Drawing of Exquisite Conurbation Exercise at Cornell University. [James Hoffman, "Exquisite Conurbation", last accessed May 28, 2021, https://cargocollective.com/jbhoffman/Exquisite-Conurbation.]

The drawing includes a temporarily designed plan of a pavilion that was on view between 1965 and 1966 designed by one of the co-founders of Team 10, Aldo van Eyck. The sculpture pavilion in Sonsbeek Park comprises six parallel walls, including semi-circular forms within the linear composition to obtain visual continuity and flexibility in the space. The plan is directly included at the upper left part of the drawing without any spatial reinterpretation. The street around the plan works as a border between the other architectural precedents and the pavilion plan. Near the drawing center, there is an example of a caravanserai plan, a common archetype starting from Europe, Anatolia, and Africa to China. Sometimes this archetype is used in cities for military purposes only as a castle, but mostly their objective is to host voyagers. The drawing, which is the plan of Qasr Kharana, is an example of the quadrangle caravanserai. At the edge of the plan, there are cylindrical observation towers because of the military function of the architecture, and the main central courtyard organizes the private and common spaces around it. Open spaces surround the plan to reflect the original context of its architectural precedent. [Figure 4.11]

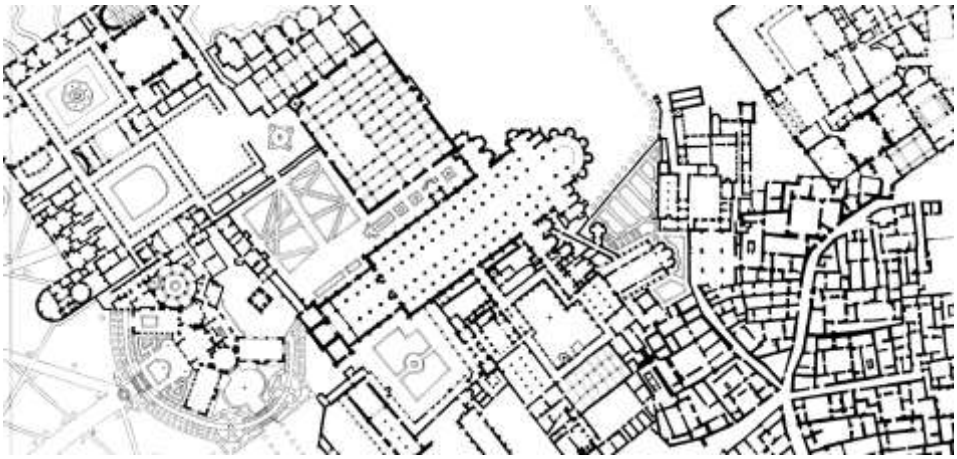

Figure 4.12 Fifth Drawing of Exquisite Conurbation Exercise at Cornell University. [James Hoffman, "Exquisite Conurbation", last accessed May 28, 2021, https://cargocollective.com/jbhoffman/Exquisite-Conurbation.]

Integrating a historical city organization partially with its architectural precedents and layout is used to compose a fictitious city plan in this drawing. For this purpose, a part of the urban city plan of the historical region of Cluny in France, dating from the late 11th to early 12th century, was directly included in the drawing without any changes or reinterpretation of the master plan. The Cluny Abbey Monastery, which represents Romanesque Architecture, is located at the center of the plan. In order to relate Lady Chapel II with the monastery, a corridor is added to the plan drawing. The corridor even connects the Cemetery Chapel and Old Church to these two religious works. Private spaces like dormitories, guest houses, and public spaces like an infirmary, storehouse, and bakery are separated from each other and located on different sides of the city plan. Partials of diverse city plans representing different city planning approaches are tried to relate in this drawing which is not a common attempt among the student projects. Hence, it represents another way of approaching the design problem concerning the objectives of the assignment. [Figure 4.12]

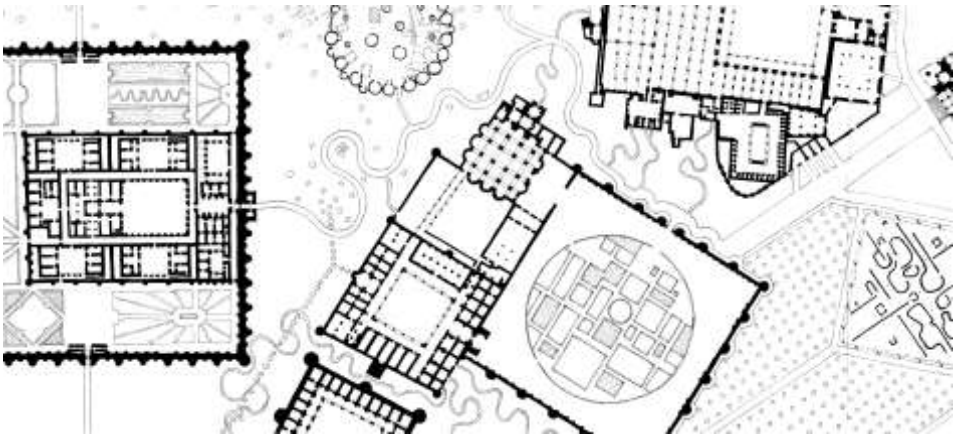

Figure 4.13 Sixth Drawing of Exquisite Conurbation Exercise at Cornell University. [James Hoffman, "Exquisite Conurbation", last accessed May 28, 2021, https://cargocollective.com/jbhoffman/Exquisite-Conurbation.]

In the last student project, architectural plan drawings have considerably limited interaction with other architectural precedents that resemble gated communities' plans due to the clearly defined boundaries. The architectural plans and urban fabric are separated from each other with an apparent design decision. The characteristics of the drawing and the grid systems are differentiated. There are some ancient garden plans in which symmetry, linearity, and diagonally are in the foreground. These arrangements in the urban environment can be a reinterpretation of the plan of the Tuileries Garden. In addition to the ancient Persian garden plans lined up side by side, the most commonly used urban element is the organically formed streets. At the right side of the drawing, there is a plan of Diamond House B, which belongs to John Hejduk's drawing series exhibited in 1967, to analyze the effects of diverse grid systems and spatial definitions in the plan drawing. The forty-five degree of rotation in the grid can be read from the drawing, and the interior space is divided by a nonconventional method in order not to have leftover spaces. However, contrary to this sensitive approach towards the use of space in the plan drawing, the open areas around the plan are designed in a monotonous manner with a strict order. They only take reference from the outer line of the Diamond House B. [Figure 4.13]

At the lower part of the drawing, the 21st century Museum of Contemporary Art Kanazawa plan is drawn in the middle of the square courtyard. This pure and straightforward geometry composed of quadrilateral divisions inside the circular form represents Modern Architecture designed by SANAA Architects. The plan of the art museum blurs the boundaries between the spaces due to the permeability achieved in the plan organization. It is included in the composition without any reinterpretation in terms of spatial rearrangement. Contrary to this approach, the conventional caravanserai archetype, positioned just next to the museum's plan and works independently from outside, creates a contrast in the city planning and enriches the urban composition in terms of spatial variety. The caravanserai plan has a large courtyard, defined with the freestanding colonnades, that organizes the private and common spaces around it. The drawing also predominantly consists of courtyard housing typologies. At the upper middle part of the drawing, multiple circular formed settlement plans are regarded as a formal reinterpretation of megaron arranged in a round form. The plans can be read as the reinterpretation of the rounded form religious architecture of tholos temples. Therefore, the plan drawing is organized to include both conventional architectural typologies and modern approaches together. [Figure 4.13]

At the end of the project, Morris has admitted that some students did not voluntarily do this exercise because they did not want to draw by hand. Hence, these students could not cope with the freehand drawing technique and tried other methods of collaging architectural plans. The first method they used benefited from the light table to trace and copy the architectural plans to folded paper.[136] Although the given assignment is not in the direction of tracing the architectural plans from a printout by using the light table, students still have the opportunity to integrate design speculations into the plans and make some changes in the formal organization of architectural precedents. Even if they try to draw precisely the same plans, hand

[136] Morris, "All Night Long", 24.

drawing can lead them to work on new spatial formations by adding personal interpretations to the plans.

Figure 4.14 Drawings of Exquisite Conurbation Exercise Lined Up Side by Side at Cornell University. [Mark Morris, "All Night Long: The Architectural Jazz of the Texas Rangers" in Drawing Architecture, Helen Castle & Spiller, Neil eds., (London: Academy Press, 2013), 26.]

A few of them used the computers directly to draw plans digitally and printed out them later when the projects were about to be finalized. The students who preferred to work with computers tried to legitimate this methodology by asserting that they were not talented and fluent in hand drawing. However, Morris calls this process a scandal due to the limitations and monotonous results of digital production compared to freehand drawing. According to Morris, one of the main objectives of this in-class activity is to lose control in the drawing process and feel free to make some mistakes

that can direct participants to obtain fictitious inventions and reinterpret the architectural precedents.[137]

4.3 City of Composite Presence

City of Composite Presence is an imaginary urbanistic collage produced regarding *Plan Game* by two graduate students at Cornell University: Hans Kollhoff and David Griffin. They have worked on this fictitious city composition till 1976 within the scope of the lessons held at Cornell University under the program of Architecture and Urban Studies. For the first time, the drawing is published in the 1978 edition of *Collage City*, a printed book from The MIT Press. This edition of the book starts with the *City of Composite Presence* on the first double pages. This situation also highlights the importance of the drawing in terms of the objectives of *Collage City*. Before this print, Rowe has also indicated some crucial points and the process of drawing in one of his articles called "Crisis of the Object, Predicament of Texture" published in Architectural Review in 1975.[138]

During their graduate studies, Kollhoff and Griffin took courses from two prominent professors, Colin Rowe and Oswald Mathias Ungers, who have diverse approaches towards architecture at Cornell University. Rowe works on architectural theories, textural analysis of the historical cities and focuses on contextualism and the critical analysis towards modernism. While, Ungers has fields of interest on the subjects like postmodern architecture, deconstruction, the assemblage of fragments, the coincidence of opposites. Thus, the drawing, which is composed of spatial fragments of the architectural precedents, reflects both professors' viewpoints. Therefore, this urbanistic collage can be defined as a graphical synthesis of the theoretical

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[137] Morris, "All Night Long", 24.
[138] Colin Rowe, "Crisis of the Object, Predicament of Texture", *Architectural Review*, No. 158 (1975): 66.
Nicola Braghieri, "Alcune Indagini e Riflessioni Intorno a City of Composite Presence", *Piano B Arti e Culture Visive*, Vol. 4, No. 2 (2019): 64.

background and architectural ideology of Rowe and Ungers. The drawing visually illustrates the fundamental theoretical discussions towards the making of the city in the 1970s.

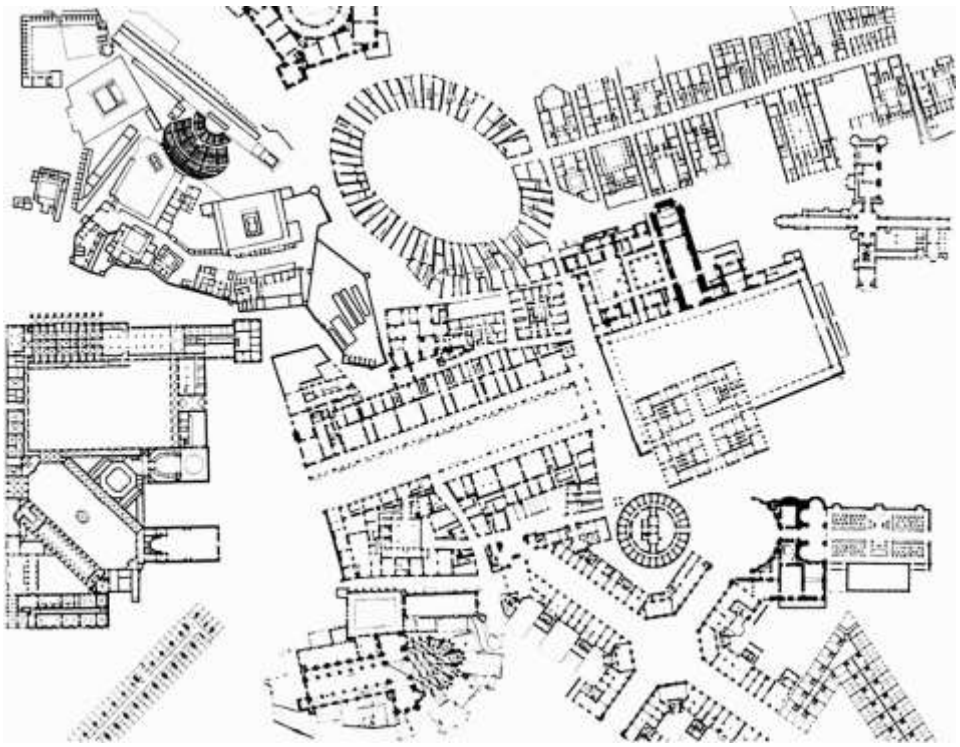

Figure 4.15 *City of Composite Presence* [Colin Rowe and Fred Koetter, *Collage City*, (Cambridge: The MIT Press, 1984). Reprinted courtesy of The MIT Press.]

The drawing explicitly focuses on the dialectical relation between urban texture and the objects of the city. Within the entire work and the design process of the drawing, Kollhoff and Griffin approach both urban fabric and architecture equally. As indicated in the final chapter of *Collage City*, the notion of "city as museum" which highlights including a variety of urban elements and architectural typologies together, reflects a significant manifestation towards the city. The traces of this viewpoint can be seen in *City of Composite Presence* which emphasizes the potentials of the assemblage of heterogeneities because it is valuable to have binary oppositions and assemblage of fragments in the design process through learning from the historical component of the city instead of dismissing them. Besides, the design

approach in *City of Composite Presence* encourages constructive ambiguity that opens the ways to speculate the limitations of reality in the making of the fictitious city plan.[139]

Most of the architectural precedents taking part in the drawing have public or at least common open spaces within themselves like streets, courtyards, squares. In order to assemble to form a fictitious city plan, they integrate the plan drawings without reinterpreting the existing spatial organization of the precedents. They paid attention to relating the plans to each other spatially and preserving the continuity of the public spaces within the plans. Instead of giving only typological information, Kollhoff and Griffin mostly used plans of prominent architectural precedents representing a varied range of periods starting from Before Common Era to the mid-20th century. They repositioned the plans of architectural precedent or the city-scale public open spaces to the drawing like a direct citation. In this way, the new spatial relations are defined between the plans. As a result, the exemplary works in the history of architecture are used as a design tool in the drawing process by referencing their design principles and spatial organizations. It is crucial to investigate the architectural precedents respectively by paying attention to their positioning in the plan drawing in order to reveal the spatial relations between these architectural plans.[140]

[139] Michael Jasper, "Re-reading Rowe and Koetter's Collage City" in Architectural Urban Strategy, SAHANZ 2017 Annual Conference Proceedings, last accessed May 2, 2021. https://www.sahanz.net/wp-content/uploads/jasper-m-architectural-urban-strategy.pdf.

[140] Five of the architectural precedents' names taking part in the *City of Composite Presence* are reached from the "Re-reading Rowe and Koetter's Collage City" written by Michael Jasper. The other architectural precedents are found by the author.

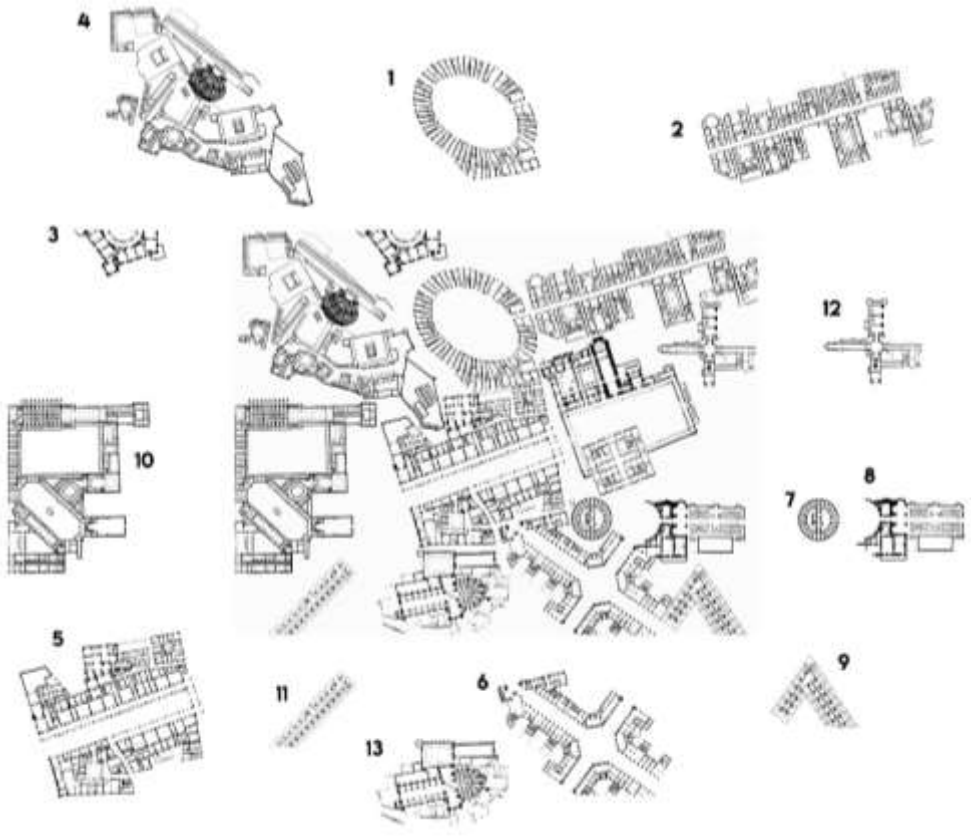

Figure 4.16 Analysis of Architectural Precedents in *City of Composite Presence*. They are numbered according to the order mentioned in the thesis. The visual made by the author.

At the top middle of the drawing, the elliptical form can be regarded as a trace from the Roman Amphitheatre organization. However, it is surrounded by closed spaces that the architectural organization of the amphitheater does not include such a spatial organization. Therefore, the plan belongs to the Piazza dell'Anfiteatro located in Lucca. The piazza is located in the same position as the Roman Amphitheatre built between the 1st - 2nd centuries outside of the city wall. The function of the amphitheater is altered to a piazza by protecting the elliptical form of open space at the center. The public square is surrounded by private spaces located side by side by preserving the positions of the gate of the amphitheater. This condition emphasizes the elliptical form of the main space and historical traces of transition spaces. The continuity of the transition can be observed at the right-hand side of the plan. The

publicity continues starting from the street between the buildings across one another linearly to the central piazza. Hence, the architectural precedent is included in the plan drawing by associating with its surrounding. [Figure 4.16-1]

The building plans lined up side by side are positioned confronting each other at the top right next to Piazza dell'Anfiteatro. This is the partial plan of a Renaissance city called Strada Nuova in Genova designed in the mid-16th century. It is a historical center composed of ancient palaces and an urban space in-between, called a linear piazza.[141] The building plot also involves some open courtyards between the built environments, which is the direct reference of the existing condition of the Strada Nuova plan. In the drawing, palace plans vary in size, but many of them include common interior atriums. Thus, the publicity level is changing gradually between the residential palaces and the street. Besides, this spatial organization ends with the public square of Piazza dell'Anfiteatro. [Figure 4.16-2]

At the upper part of the Piazza dell'Anfiteatro, there is a partial plan with a polygon form. The architectural precedent of this plan can be Villa Farnese, also called Villa Caprarola, designed in the early 16th century in Italy. The plan is an example of a palazzo archetype of the late Roman Renaissance. It has a pentagonal form, including tetragonal bastions at each corner to preserve the palace from the outer treats. The palazzo possesses a circular courtyard at the center defined by freestanding colonnades. The plan is included in the drawing without any spatial references to two architectural precedents surrounding the palazzo. Still, the open spaces are defined between the plans due to their borderlines. [Figure 4.16-3]

The Plan of Acropolis of Pergamon has included at the top left part of the plan drawing by referencing the orientation angle of Piazza dell'Anfiteatro. Currently, it is an urban archeological site that involves multi-layering of various cultures, especially a prominent example of Hellenistic architecture, located in Turkey. The

[141] George L. Gorse, "A Classical Stage for the Old Nobility: The Strada Nuova and Sixteenth-Century Genoa", *The Art Bulletin*, Vol. 79, No. 12 (1997): 301.

acropolis comprises diverse spaces with different functions like theatre, basilicas, library, palaces, military posts, and agora. The archetype of stoa and freestanding colonnades defines the theatre's terrace and the main entrance of the acropolis. This complex also physically differentiates the spaces from each other by using various grid systems. Besides, the space of the military post gives positional reference to the plan located at the bottom right part. [Figure 4.16-4]

The Galleria degli Uffizi is the plan positioned to the drawing concerning the orientation angle of the military post of Pergamon. Besides the administrative offices on the ground floor lined side by side, the upstairs contains valuable works of art that did not fit in the palace previously belonging to the Casimo family. Then, the function of the building is altered to be a fine art museum presenting the Medici collection. It is a leading work of Italian Mannerist Architecture, designed by Vasari in the late 16th century. It possesses a U-form having a long and narrow interior courtyard which is called a cortile. Some streets connect to this monumental passageway that causes an increase in the publicity level of the cortile. [Figure 4.16-5]

At the bottom right, there are plans of two intersecting arcades, an example of the reinterpretations of arcade archetype. Due to this intersection, the plan constitutes a Latin cross form. As an architectural precedent, the Galleria Vittorio Emanuele II plan can be regarded as the emergence of galleria form built in 1865 by Giuseppe Mengoni. This ancient shopping mall is composed of many stores, restaurants, and cafes. It is a part of the urban environment of the city, like a living room of Milan. Existing an octagonal center at the intersection point of the arcade is one of the main characteristics of this architectural work. In the plan drawing, one of the Galleria Vittorio Emanuele II arcades ends with the street, feeding the linear courtyard of the Galleria degli Uffizi. Hence, the continuity of the urban fabric is obtained through the arcades, streets, and courtyards. [Figure 4.16-6]

At one of the open spaces that Galleria Vittorio has defined by its outer line, a plan of a circular tower is positioned instead of leaving the space as a leftover. This

circular tower is divided into small cells lined up side by side, having very limited interaction with the outside due to the tiny openings on the facade, which are only to let the light in. There are two separated semi-circular courtyards at the center of the plan, and the structure seems like a control tower due to the rectangular closed spaces in-between. Hence, it resembles the control system in the prisons, but the tiny openings on the facade direct to search another function that requires keeping an eye on the dwellers. As a result, the drawing is the plan of the Narrenturm also having another name, Fool's Tower, built in 1784 in Vienna. It is known as the oldest psychiatric hospital serving people with mental health conditions. The entrance space of the tower gives references to the plan drawing positioned on the right-hand side. [Figure 4.16-7]

Narrenturm's plan and the plan at the right part have consisted of forms that complement each other like puzzle pieces. The semi-circular courtyard and the circular tower plan are drawn having the same radius. Sometimes, it is hard to distinguish whether it is an interior space or an exterior open space in the drawing. The spatial distinction between them is blurred due to the drawing technique. It is Garden Loggia and Villa Madama, a rural palace designed by Raffaello Sanzio referencing the Renaissance Architecture in Rome in the early 16th century. The plan is composed of a semi-circular niche defining the courtyard called exedra, Garden Loggia, formal Roman garden arrangement, fishpond, and certain closed rooms.[142] Thus, the plan comprises the domination of open spaces. Also, the linear continuity in the circulation space achieved in the whole design proceeds till the courtyard of the Narrenturm. [Figure 4.16-8]

At the bottom part of the rural palace, there is a plan drawing of a residential building composed of repeating units. This plan is drawn parallel to Galleria Vittorio

[142] Maria Fukada, "Ideological Spaces of the Garden Loggia in Villa Madama", *Aspects of Problems in Western Art History*, Vol. 13 (2015): 51.

Emanuele II. The architectural precedent of the L-shaped residential unit is probably the Palace Dauphine built in 1607 in Paris. The palace is composed of two L-shaped blocks, which generate a triangular public square in-between. The public space is defined by the residential building, which cannot be seen as a whole in the drawing, and two intersecting arcades are associated due to its parallel positioning. Therefore, the continuity of the urban public spaces can be read from the drawing. [Figure 4.16-9]

A partial plan of another royal palace called Munich Residenz was built in the late 14th century in Germany at the middle left. This royal palace is an architectural example of the late Renaissance, Baroque and Rococo periods. Although it is a partial plan, the plan drawing contains numerous rooms and courtyards, which also physically differentiate themselves from the others regarding the spatial organization. So, the plan is not read as a whole; instead, it is composed of many fragments. In order to associate the architectural precedents, one of the semi-open courtyards is drawn in the same line with the long and narrow courtyard of Galleria degli Uffizi. Also, the extended linear volume of the palace defines a public courtyard together with the outer counter lines of Uffizi and Pergamon. [Figure 4.16-10]

One of the famous Modern Architecture examples of the large-scale housing project is drawn at the bottom-left part of the drawing. It is the plan of Unité d'Habitation, designed by Le Corbusier after World War II. It is included in the fictitious city plan with an angular orientation that can reference its original positioning. The angled positioned courtyard of Munich Residenz and the plan of this residential housing plan are orthogonal to each other. Besides, when the drawing is analyzed in terms of solid and void relation, the narrow and long courtyard of the Galleria degli Uffizi representing a void has almost the same dimension compared to the plan of Unité d'Habitation, representing the solid part of the composition. [Figure 4.16-11]

There is an unusual plan drawing at the bottom of Strada Nuova. It has a central organization composed of different spatial features dominating octagonal formed

and narrow-linear spaces. The plan resembles a gothic cathedral because of octagonal cabinets at the corner of the spaces and niches at the sanctuary-like spaces. But surprisingly, it is just a plan of a country house called Beckford's Folly designed by James Wyatt in the late 1700s in England. The plan drawing is involved in the fictitious city plan with an angled position which is probably to define specific open spaces between the borderlines of the other plan drawings. In this way, the enormously huge undefined open areas get closer to the human scale. [Figure 4.16-12]

There is an example of cathedral organization at the middle part of the bottom, which includes four radiating chapels and one lady chapel. The transept section is close to the main sanctuary part. The architectural precedent of this plan can be the Cathedral of Notre Dame de Paris, designed in the mid 19th century as a prominent example of French Gothic Architecture. The cathedral is surrounded by residential units, which is not common in the *City of Composite Presence*. With the help of these building plans, some streets are defined as an urban fabric in which Galleria degli Uffizi's courtyard is associated. Hence, the plans of architectural precedents are used to obtain the urban environment in this fictitious city plan. [Figure 4.16-13]

When the *City of Composite Presence* is examined, although the plans of architectural precedents seem to be included in the imaginary city plan randomly at first without reference to the urban texture and each other, they establish quite significant spatial relationships. Unlike the design approach in *Plan Game*, Kollhoff and Griffin indicated their approach about the relation between the urban environment and architecture into the composition by benefitting from only architectural plans rather than emphasizing the urban component of the city. Thus, no line is drawn to indicate any of the streets or courtyards in this plan drawing. Instead, the outlines of the architectural precedents have defined them without further effort. To do so, it is crucial to relate the plan drawings to each other through the continuity, intersection, or angled orientations. The plans are included in the drawing by associating them with each other. Therefore, it is challenging to change the positions of any plans, which appear to be unrelated to each other at first sight.

If their position is changed, the spatial relationships they have established on a larger scale are damaged. There are also some leftover spaces in the drawing. If these areas were intentionally left blank, this decision wisely directs the observers to ponder over alternative spatial reinterpretations to be included in the drawing by specifying that the game is not concluded. Indeed, this game is never completed; it constantly renew itself with new possibilities and is open to new contributions.

It is crucial to examine *Plan Game* and other works referencing *Plan Game* to develop new perspectives about the relation between architecture and the making of the city. This process is also beneficial to comprehend the importance of architectural precedents in the design process. Analyzing existing architectural studies and trying to find new spatial relationships, and getting into the core of architectural design, are necessary steps to internalize different approaches towards architecture and city design. For this purpose, *Plan Game*, the studio work of Bernhard Hoesli at ETH Zurich, the *Exquisite Conurbation* exercise that Mark Morris continued for a semester at Cornell University, and the *City of Composite Presence* produced by two graduate students for the lecture of Colin Rowe in the mid-1970s were analyzed in detail.

CHAPTER 5

PLAN GAME WORKSHOP SERIES

In addition to a historical reading, it is equally significant and necessary to carry this discussion up to contemporary practice. To do this, *Plan Game Workshop Series* was organized starting from 10th to 24th May 2021. Within the master's thesis scope, the workshop aims to associate historical architectural debate with contemporary practices. It also offers an alternative design field to encourage the dialectic between architecture and urban fabric regarding the representation of the city. The workshop contains three different sessions to address three diverse groups in architecture: faculty members in the department of architecture, practicing architects, and graduate students. In this way, the variation in the design approach between groups could be observed. The number of participants in the groups was varied between 7-8 for each session. Because of the COVID-19 pandemic, the workshop series could not be held face to face, instead performed digitally.

Due to this outbreak, *Plan Game Workshop* took place by following a diverse method compared to its original: the first participant drew at least two architectural precedent on A4 paper, which were scaled considering the contribution of other participants. Then the drawing was scanned and sent via e-mail to the workshop coordinator. The flow of information between the participants and the directing of the final drawing to the next participant was under the coordinator's responsibility. The second and subsequent participants first printed the drawing sent to their e-mail addresses on the printer. They contributed to the fictitious city plan by drawing architectural precedents and adding semi-open and open public spaces to the urban fabric. Then the scanned drawing was sent to the coordinator. If the participants had graphic drawing tablets, they could use them without wasting time for the printing and scanning processes. Therefore, to attend *Plan Game Workshop*, the participants

needed a black drawing pen, A4 paper, a printer scanner, or a drawing tablet to replace all previous items and the internet. Thus, instead of gathering together the participants around a table, *Plan Game* has been revived in a virtual environment due to COVID-19 restrictions.

There were some points that participants should pay attention to in the design process to have consistency in the end-product. The first of them is paying attention to the scale of the plans. The drawing is not required to be drawn to necessarily a specific scale, like 1:500 or 1:1000, but the architectural precedents in the drawing need to be consistent in scale. Another significant issue is the positioning of the plan drawings. The plans need to be drawn concerning the existing plans of architectural precedents and urban fabric. Therefore, it should establish new spatial relationships where the plans are located in the drawing. Hence, it is a crucial design decision in which part of the drawing the architectural precedents are placed and what spatial relations they will establish where they are positioned.

Figure 5.1 The Poster of *Plan Game Workshop Series*. The visual made by the author.

Plan Game Workshop Series are completed in three sessions with the contribution of the 23 participants in total consisting of eight graduate students, eight faculty members, and seven practicing architects. All participants participated in the workshop voluntarily. Workshop participants consist of faculty members and graduate students working in the institutions where the author was educated and architects she knew from personal relationships. Due to the fact that the participants continue to work on different fields of architecture, they were able to approach the workshop spatially in different ways.[143]

Within *Plan Game Workshop Series* scope, three entirely different drawings were created at the end of each session. These end-products are an indication that different spatial organizations can be developed each time at the end of *Plan Game* exercise by pondering over the relations between the architectural precedents and urban fabric. Indeed, it is interesting to observe various design decisions in the city planning process and diverse approaches in combining plans of architectural precedents with the urban environment in each fictitious drawing. Distinguishing their common points and different aspects regarding the overall composition is another issue to uncover.

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[143] The architects continuing their graduate education at METU who participated in the graduate student session held within the scope of the workshop are as follows: Güneş Duyul (Ph.D. student), Sonat Özcivanoğlu (Ph.D. student), Melis Acar (Ph.D. student), Çağrım Koçer (Ph.D. student), Aylin Alicanoğlu (Ph.D. student), Tulû Tohumcu (Ph.D. student), Alpay Aydın (Master's student) and Sena Türe (Master's student).

The architects working in the departments of architecture at different universities that participated in the faculty member session held within the scope of the workshop are as follows: Assist. Prof. Dr. Başak Uçar (TED University), Assist. Prof. Dr. Duygu Tüntaş (TED University), Assist. Prof. Dr. Ekin Pınar (METU), Assist. Prof. Dr. Azize Elif Yabacı (TED University), Assist. Prof. Dr. Gökhan Kınayoğlu (TED University), Assist. Prof. Dr. Burak Bican (Atılım University), Assist. Prof. Dr. Pelin Yoncacı (METU), Assist. Prof. Dr. Derin İnan (TED University).

The architects who participated in the practicing architect session held within the scope of the workshop are as follows: Fatih Yavuz (co-founder of FREA), Emre Şavural (co-founder of FREA), Ferit Can Aker (architect in the design team of Erimtan Archeology and Arts Museum), Cem İlhan (co-founder of TECE Architects), Ziya İmren (founder of Ziya İmren Architects), Tamara Nazari (architect in the design team of Ziya İmren Architects), Onur Özkoç (co-founder of MOTTO Architecture).

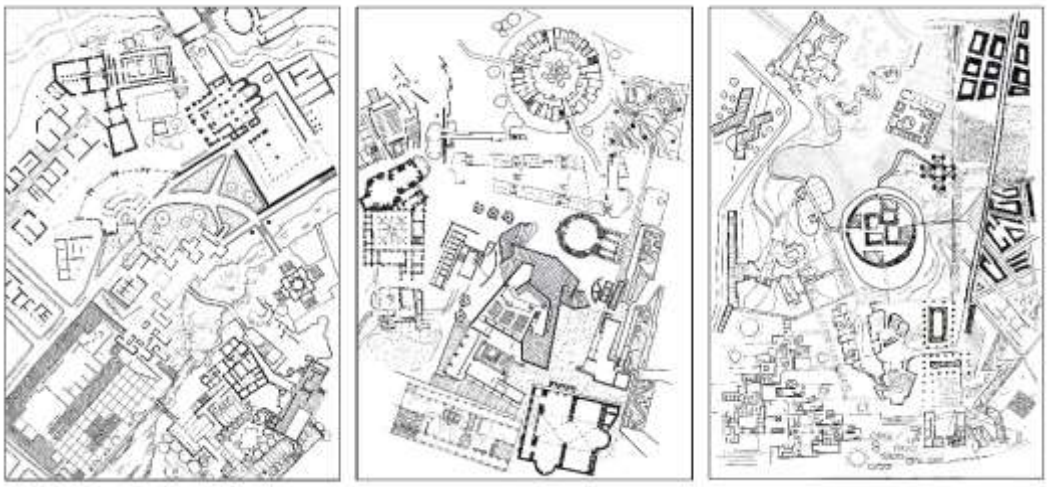

Figure 5.2 Drawings Produced within the Scope of *Plan Game Workshop Series* with the Participation of Graduate Students, Faculty Members, and Practicing Architects from Left to Right.

5.1 The Drawing Produced by Graduate Students

In the drawing produced by graduate students, almost all of the architectural precedents are angularly positioned. However, there is not a strict grid organization in the city plan. The urban environment defined in the composition spatially works together with the architectural component of the fictitious city. Hence, there is no differentiation in terms of hierarchy. Neither architectural precedents nor open public spaces within the urban fabric are not brought to the fore in the drawing. Unlike the other two drawings produced in the workshop's scope, the water element has an influential role in the city composition. Merging imaginary spatial organizations with the built architectural precedent is another aspect that differentiates this drawing from the others. The other drawings produced within the workshop do not consist of imaginary architectural plans, only from the plans of architectural precedent. Thus, the drawing includes unreal building plans inspired by the existing spaces in the drawing.

Figure 5.3 Drawings Produced by the Graduate Students within the Scope of *Plan Game Workshop Series*.

The architectural precedents in the drawing are dominantly examples from the late 20th century. The earliest period represented in the drawing is the 4th century BC by a dwelling unit positioned at the bottom. The most contemporary example is the church designed in 1999. Also, these two architectural examples are positioned in the city plan side by side, possibly to emphasize and strengthen the term of fictitious. Besides, the imaginary city plan includes examples of religious buildings from different eras. In this way, the chance to observe how religious buildings differ spatially in centuries is given.

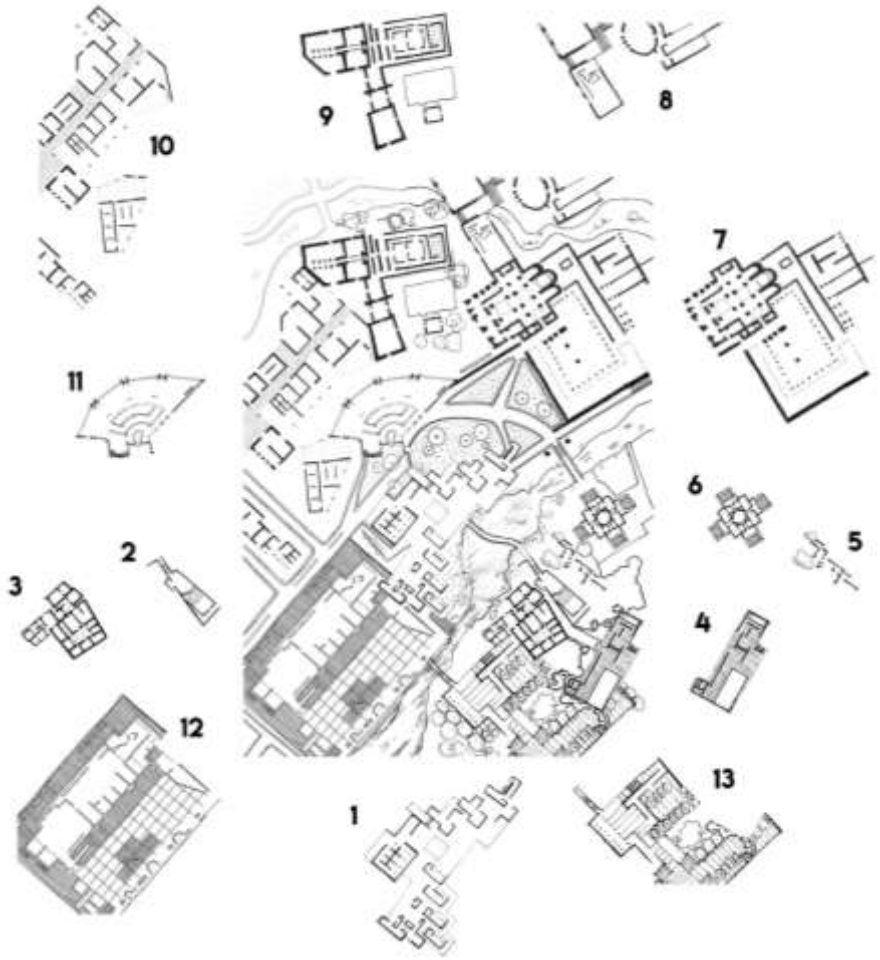

Figure 5.4 Analysis of the Drawing Produced by Graduate Students. They are numbered according to the order mentioned in the thesis. The visual made by the author.

In the middle of the drawing, there is a complex composed of repeating units. The overall footprint of the complex and the architectural hinges on the walls resemble the Amsterdam Orphanage designed by Aldo van Eyck in 1960. It is an example of a large-scale project that belongs to modern architecture. However, the plan is reinterpreted by the participant and included in the drawing. The number of courtyards is decreased, whereas the main courtyard still has the central position. The overall composition is not dominant in the drawing because the closed spaces in the plan dissolve in the drawing, which causes the plans to be perceived as semi-closed and open public spaces. The Amsterdam Orphanage plan is connected via a

narrow transition space above the water element to another plan drawing at the bottom right. [Figure 5.4-1]

The architectural precedent at the bottom part is the plan drawing of the Church of the Light designed by Tadao Ando in 1999. It is a crucial work regarding the togetherness of the light and solid in the history of modern architecture. Instead of religious motifs and ornamentation, the plan has pure geometry. Only the openings in the plan let the natural light in the building purposing to obtain a sacred atmosphere. The entrance of the plan is reinterpreted to procure continuity in the movement starting from the central courtyard of the Amsterdam Orphanage. The plan is composed of a pure rectangular volume and an angularly positioned wall. Hence, the transition space is strengthened and differentiated from the main volume due to this angularity. [Figure 5.4-2]

Next to the Church of the Light, there is a plan drawing of dwelling units, an example of Ancient Rome dated back to the 4th century BC.[144] The drawing takes part in Atina Acropolis City Plan, close to the Agora. The dwelling units are oriented regarding the position of the angular wall of the Church of the Light. Due to this positioning, the transition space in-between is defined by the contour line of the house. Also, the public transition space is connected with the common open courtyard of the dwelling units through a narrow corridor. Therefore, the continuity of the movement is obtained in the drawing. [Figure 5.4-3]

The same transition space starting from the Amsterdam Orphanage ends with the plan, Barcelona Pavilion, an example of modern architecture designed by Mies van der Rohe in 1929, positioned at the bottom right corner. Phenomenal transparency and layering of the vertical elements play a crucial role in increasing ambiguity in this architectural work. Contrary to the entrance defined in the drawing, linearity plays a significant role in the overall design. Besides, cross-hatching is included in

[144] Leland M. Roth, *Mimarlığın Öyküsü (Understanding Architecture: Its Element, History and Meaning)*, trans. Ergün Akça, (İstanbul: Kabalcı Press, 2000), 272.

the plan drawing to differentiate the water element from the slab and underline the grid system of the design. [Figure 5.4-4]

The drawing also includes some other references from modern architecture, which probably cannot be distinguishable at first sight. At the upper part of the Church of the Light and Barcelona Pavilion, there are plan drawings of load-bearing walls of Fallingwater House, which seems like the labyrinth located in an open environment, designed by Frank Lloyd Wright in 1939. The characteristic drawing of the load-bearing walls and the drawing techniques of the trees located close to them make them distinguishable. These load-bearing walls, which make possible the use of cantilever slabs, reflect Wright's main philosophy to integrate nature into architecture. The position of these walls in the drawing can have a specific purpose because two different architectural approaches towards nature are represented in the drawing by positioning Church of the Light and Fallingwater House side by side. [Figure 5.4-5]

The plan of Villa La Rotonda, a well-known work of Andrea Palladio designed in 1570, is drawn at the middle right part of the drawing. This work reflects the influences of both Renaissance and Neoclassical architecture. Also, the plan of Villa La Rotonda is influenced by the plan organization adopted in ancient times, taking reference from the Greek cross plan.[145] The plan drawing has an absolute symmetry, central organization, and four porticos in total for each facade. The porticos and the circular central hall are connected via narrow and linear corridors. When the fictitious drawing is analyzed regarding the density of the outdoor spaces, the plan of Villa La Rotonda is located in an area containing a sparse built environment. Thus it reflects the actual context of the villa, which is a suburban area. [Figure 5.4-6]

The plan of Villa La Rotonda is connected to a garden by a bridge passing above the river. All the bridges located at the bottom right part of the drawing passing above

[145] Ovidio Guaita, *Italian Villas*, (New York: Abbeville Press, 2003), 102.

the water element of the fictitious city plan include a vertical circulation. This situation creates continuity in the drawing by emphasizing the level difference between the lower right area of the drawing and the rest. Hence, instead of prioritizing architectural components or urban environment, all the components of the fictitious city have a significant influence on the overall organization. Thus, in the drawing, these elements have a strong relationship rather than independent.

Each walking path of the garden in the middle of the drawing ends with an architectural precedent. It connects Villa La Rotonda and Amsterdam Orphanage to a piazza at the upper right. Due to two crucial symbolic columns in the piazza, it is evident that this is the plan of Palazzo Ducale. The piazza, whose boundary is defined by the free-standing colonnades, is the open public square of St. Mark's Basilica. Besides, it is interesting that the Palazzo Ducale is widened to the upper right part by repeating the drawing language of the piazza by another participant in the workshop. This reinterpreted part includes more fragmented open spaces compared to the Palazzo Ducale. St. Mark's Basilica, next to Palazzo Ducale, references the Greek cross archetype and is a prominent example of Byzantine and Venetian architecture dated back to the 11th century. The apse part is composed of the main chapel and two radiating chapels, and it contains five domes; one of them is not drawn in the drawing. Palazzo Ducale and St. Mark's Basilica plans use the reference from existing drawings and inspire the other participants. Also, the interior and exterior spaces are taken part in the drawing in a balanced way. [Figure 5.4-7]

The river located at the upper part of the St. Mark's Basilica works like a threshold in the fictitious drawing. Even though the reinterpreted part of the Palazzo Ducale continues at the other side of the water element by referencing the dimension and orientation of the semi-closed public space, this spatial organization enables only visual continuity parts to be physically differentiated from each other. There is a circular and permeable space in the middle of the semi-closed spaces located at the upper right corner of the drawing. The landing between the stairs connects the semi-closed spaces to closed ones. Thus this complex offers a varied range of space definitions within itself. [Figure 5.4-8]

There is a complex having two main axes positioned angularly at the top left of the drawing. Thin and long free-standing columns define the transition space from the stairs to this complex, and it is located close to the water element. Contrary to the geographically limited selection of architectural precedent in the original *Plan Game*, this drawing created by the graduate students includes an example of an ancient Egyptian temple. This plan belongs to one of the enormous religious structures known as the Temple of Amun-Re, containing many temples dated 1070 BC. [146] It is composed of three main sections having diverse spatial definitions and one transition space. At the left part, linear movement is dominant, and the space contains free-standing colonnades. The right part includes fragmented spaces oriented like a labyrinth defined by columns and linear separator walls. The temple at the bottom is handled as a whole without any division. There is also a sacred lake on the right-hand side, separated from the main complex. Besides, the orientation of the temple provides the formation of triangular courtyards. It enables the definition of the open public spaces outside the built environment regarding a human scale. [Figure 5.4-9]

At the top left part of the drawing, there is a complex composed of semi-open and closed spaces. It takes many references from the existing plan drawings. For instance, the complex orientation is parallel to the long facade of the plan located at the bottom part. It references the column in the middle of the fractured facade by indicating the vertical circulation and changing the orientation of the space. The complex contains diverse spatial definitions within itself. It uses different kinds of hatching methods which also increases the level of diversity in the plan drawing. In addition to hatchings, the free-standing colonnades play a crucial role in defining the semi-open spaces. Besides, it includes a narrow inner street that organizes the spaces around it, enabling the transitive movement between the spaces. Plan drawing

[146] Elizabeth Cummins, "Temple of Amun-Re and the Hypostyle Hall, Karnak", Khan Academy, last accessed June 5, 2021, https://www.khanacademy.org/humanities/ap-art-history/ancient-mediterranean-ap/ancient-egypt-ap/a/karnak

prioritizes neither architectural works nor public open spaces, and it approaches equally both of them. [Figure 5.4-10]

The last architectural precedent that the green space in the middle interacts with is the plan located at the left-hand side, having a fractured facade. This is the partial plan of Mount Angel Abbey Library designed by Alvar Aalto, completed in the early 1970s. Between the interior of the plan drawing and the garden, the visual continuity is obtained using a transparent facade positioned close to the garden. The plan has a central focus and contains curving walls and columns positioned in an arced form to increase this centrality in the design. Also, the entrance of the plan is connected with the fictitious city plan through the specialized walking path. Because of these design decisions, the plan has a strong interaction with its surrounding. [Figure 5.4-11]

At the bottom left, there is a quite radical architectural approach compared to its time. Essentially, this architectural work remunerates the word of architectural precedent by pushing the structural limits and comes up with unconventional design solutions. This significant and angularly oriented plan drawing belongs to Centre Pompidou, designed by Renzo Piano and Richard Rogers in 1977. The plan reflects the new architectural approach: inside out of the infrastructural system to enlarge the interior space. Hence, the interior space of the cultural center can be experienced as a whole without any division. A void whose dimension equals the area occupied by the built environment is defined at the front of the building. [Figure 5.4-12]

Additionally, the open public space also has obtained a physical connection with the Amsterdam Orphanage by using large steps. Besides, different kinds of textures are used in this public square to differentiate specific public fragments which enrich the urban fabric. The drawing also includes the roads surrounding the cultural center to give reference to its actual context. Also, one of the plots, defined by these roads, is used by another participant to integrate semi-open spaces.

The open space of Center Pompidou has a strong relationship with the water element drawn in front of its bottom facade. It is also connected with the complex at the bottom right part of the drawing containing semi-closed and open spaces through a

bridge. In this complex, the movement between the spaces and transition area plays a significant role. It connects the plan of Center Pompidou, dwelling units of Ancient Greek and Barcelona Pavilion, to each other. Rather than referencing one of the architectural precedents in the history of architecture, the complex comprises several semi-closed and open spaces that integrate the spatial relation between the existing architectural plans in the fictitious drawing. [Figure 5.4-13]

It is crucial to examine the design process of the fictitious city plan when there is a chance to know the sequence of the contributions since analyzing this process can present new learning outcomes from this inspirational work. The drawing process in the city plan produced by graduate students starts from the center. Also, the water element plays a significant role in the overall organization. It is interesting to observe that some participants give spatial hints to direct the other contributions. For instance, the second participant adds bridges as a transition space to the city plan where there is no water element, and she also draws a river that does not end at a point. In this way, they encourage the following participant to give an imaginary response to existing and unassociated architectural elements. Hence, the two rivers taking part in the collective drawing are drawn by the contribution of five individuals. Besides, the fourth participant integrates some empty plots into the urban fabric. Semi-open spaces are drawn in this plot by the individual who contributed to the drawing after two participants. Thus, the contribution is varied based on how the individual perceives existing negative spaces.

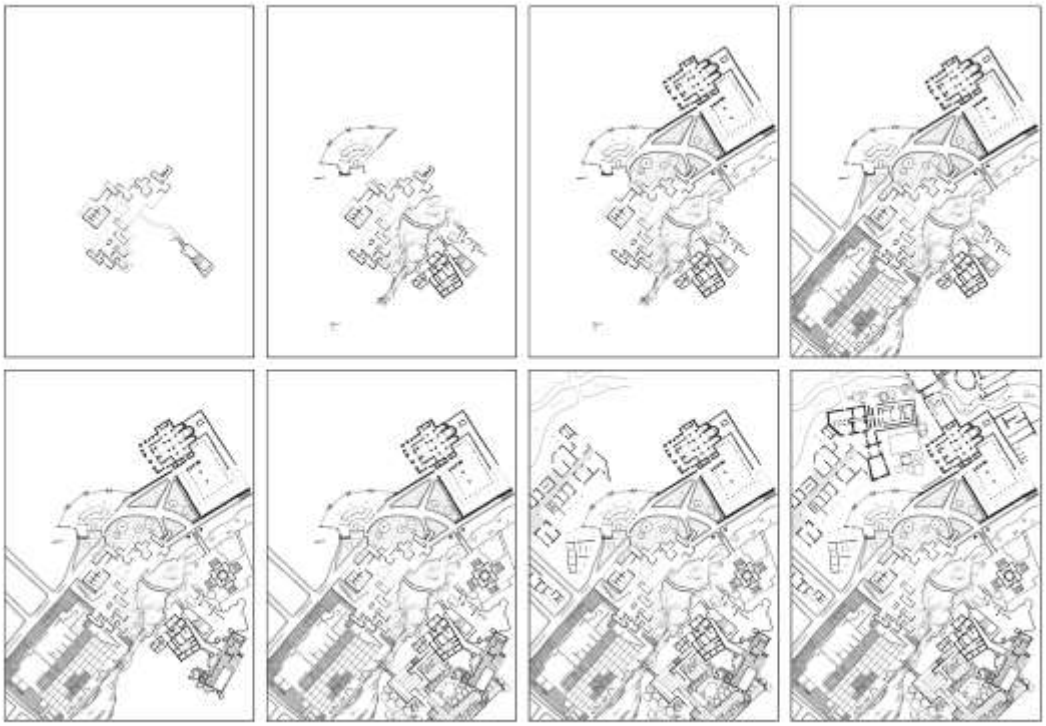

Figure 5.5 The Drawing Process of the City Plan Produced by Graduate Students. The visual made by the author.

Even though the participants give minor spatial hints to direct other contributions, the plans of architectural precedents are generally integrated into the city plan. They associate them with the existing plans instead of drawing the plans separately, instead of waiting for another participant to relate them to each other. Besides, it can be read from the drawing process that some of the participants merge new imaginary spatial organizations to the real architectural works by mimicking the design language of existing drawings. This approach can be seen in the contribution of the last participant in which some semi-open spaces are added to the plan composition of St. Mark's Basilica and Palazzo Ducale. It is precious to observe this reinterpretation that indicates the participants analyze the existing plans in terms of spatial relations and ponder over how to combine new contributions concerning the existing spatial definitions.

5.2 The Drawing Produced by Faculty Members of Architecture

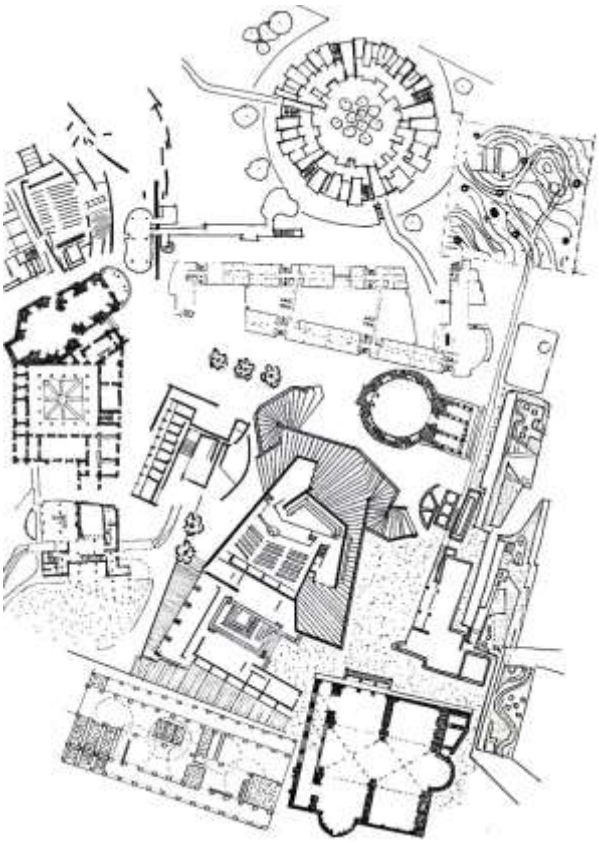

Figure 5.6 Drawings Produced by the Faculty Members within the Scope of *Plan Game Workshop Series.*

The plans of architectural precedents come into prominence in the overall organization of the imaginary drawing produced by faculty members. The urban context is mainly defined by the leftover open spaces between the architectural works. Also, the open spaces already existing in the plan drawings of architectural precedents are integrated into the fictitious city plan. Some of the open spaces are defined by the dotted hatching to differentiate the hard surfaces from the soft ones. The plans located at the left-hand side are positioned perpendicular to the drawing plane. However, the dominant grid system in the drawing is slightly angular.

The drawing reflects a wide range of architectural precedents in terms of periods. It starts with Pantheon from the 2nd century and ends with Tietgenkollegiet as a recent proposal designed in 2005. However, the architectural works designed in the 20th century have domination in the fictitious city plan. The drawing involves plans of four religious buildings, four housing units, and three cultural centers in terms of architectural programs. Another point is not seen in the other drawings produced within the workshop's scope: integrating a landscape precedent to the city plan. In this way, different fields of design are associated with each other, purposing the assemblage of heterogeneities. Analyzing the architectural precedents drawn in the city plan is necessary to observe interesting spatial organizations designed in the collective drawing.

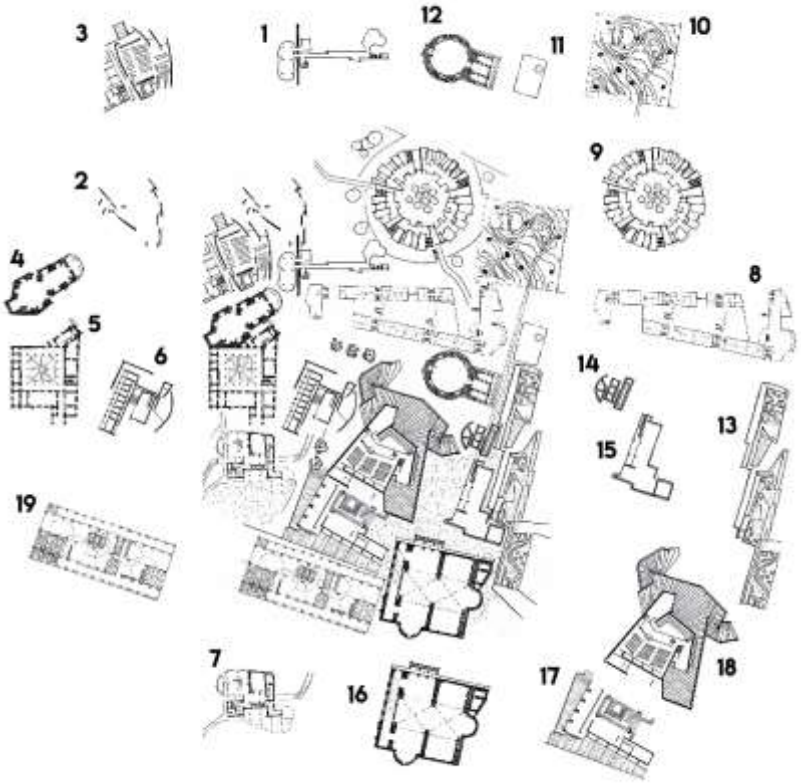

Figure 5.7 Analysis of the Drawing Produced by Faculty Members. They are numbered according to the order mentioned in the thesis. The visual made by the author.

There is an example of residential architecture at the upper left, whose spaces are physically differentiated from each other. Instead of perceiving the design as a whole, each unit is represented geometrically separated in the plan of Wall House 2 designed by one of the Texas Rangers' members, John Hejduk, in 1973. The organically formed spaces are arranged around the central axis of the transition space, and the residential units are symbolically divided by the positioning of the perpendicular wall. Thus, this architectural work is an outstanding example regarding the perception of the spaces. [Figure 5.7-1]

Taking reference from the separator wall of the Wall House 2 project, there are some linear drawings included at the top of the fictitious drawing. These are some architectural clues about a well-known urban project that belongs to the proposal of Zaha Hadid for the Parc de la Villette project located in Paris dated to 1982. It is comprised of several linear elements taking part in two directions. Because of the limitation of the drawing scale, the participant probably prefers to indicate the partial drawing of this unique project. Besides, the direction of these linear elements and the corridor in the upper middle part of the drawing indicate the void on the left. This situation can be interpreted as a conscious effort to indicate that *Plan Game* is an exercise that can never be completed. [Figure 5.7-2]

The wall also plays a significant role as an architectural element in the plan drawing positioned at the left part of Wall House 2. This is the plan of Jubilee Church, the winner of the international project designed by Richard Meier in 2003. Unlike the straight separator wall of Hejduk, there are three long curved walls in the plan. The level of their bending increases gradually to controls the daylight in the church, and the in-between spaces gain importance in the church project due to the walls working like a spatial separator. [Figure 5.7-3]

At the bottom left part of Wall House 2 an ancient church plan is drawn, an example of Italian Renaissance Architecture. It is the plan of Santa Maria della Pace designed at the end of the 15th century. This drawing comprises a church and monastery plans

designed by two architects, respectively Pietro da Cortona and Donato Bramante.[147] [Figure 5.7-4, Figure 5.7-5] The church is designed based on the architectural operation of carving out to obtain spaces around the nave. Also, the semi-circular porch, called Chigi Chapel, probably plays a vital role in the positioning of the church in the drawing since it has a visual relation with the organically formed private units of Wall House 2. This seems like a reinterpretation of the spatial composition in the architectural precedents; however, this circular plans with columns exist in both of the built plans. [Figure 5.7-4]

The church is connected with the monastery by the chapel positioned close to the nave. The monastery has a square-shaped courtyard at the center, surrounded by closed spaces where cloistered religious communities lived. The courtyard design, which is defined by free-standing colonnades, resembles the peristylium of the Roman domus. As a result, the plans reference the existing plans of architectural precedents in the drawing by indicating semi-circular porch to Wall House 2 and rectangular closed spaces of monastery part to the residential plan at the right-hand side. [Figure 5.7-5]

The residential work composed of one semi-circular and two parallel rectangular spaces is the plan of Koshino House designed by Tadao Ando in 1984. The transition spaces connect these three different forms. All the spaces are physically differentiated and represented individually based on their functions. The private spaces in Koshino House comprised from the smaller spaces lined one by one in the big rectangular form has a close relationship with the private space of monastery at the left part both spatially and functionally. Also, it is interesting to observe the two different representations of the Koshino House in varied detail and scales in the fictitious drawing. They both interact with the public space around the auditorium plan positioned at the middle of the drawing. [Figure 5.7-6, Figure 5.7-14]

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[147] Tyler Lansford, *The Latin Inscriptions of Rome: A Walking Guide*, (Baltimore: Johns Hopkins University Press, 2009), 419.

At the bottom part of the monastery of Santa Maria della Pace and Koshino House, there is a plan of Carpenter Center for the Visual Arts designed by Le Corbusier in 1960-61. This architectural work is prominent in the history of architecture with its architectural promenade, center ramp, exposed concrete walls, and angled brise soleils on the facade of the building by referencing Modern Architecture. The continuity in the circulation between the Carpenter Center and Koshino House is provided through the central ramp. Also, the participant reinterpreted the spatial relation of the studio with the outside by adding a transition space towards the courtyard of Santa Maria della Pace. The elevated base plan allows continuity in the spatial flow at the ground level. [Figure 5.7-7]

At the middle of the drawing, there is a complex composed of two long rectangular forms which define the atrium at the center, and a semi-circular space is added at the end of one of the rectangular forms. Also, the two central rectangular units are connected by elevated transition spaces. This is the plan of Den Haag City Hall in the Netherlands designed by Richard Meier in 1986. The plan is drawn parallel to the directionality of the circulation volume of Wall House 2 in the drawing. Besides, the interior courtyard of the city hall is connected with the complex positioned at the top part through a defined corridor to increase the level of publicity. [Figure 5.7-8]

A dominant circular form comprised of the small fragmented units lined up side by side is drawn at the top middle part of the drawing. The orientation of the forms defines a circular inner courtyard is defined at the center. It is the plan of a dormitory in Copenhagen called Tietgenkollegiet, which was designed by Lundgaard & Tranberg Architects in 2005. The architectural operation of extension is implemented to the units to obtain a dynamic expression on the facade of the courtyard and in-between spaces. Hence, the plan obtains a spatial balance in terms of solid and void relations. Also, the inner courtyard has a direct relationship with the semi-circular volume of the Den Haag City Hall containing the library. Therefore, this design decision purposes that the students in the dormitory complex attain the library section directly. Tietgenkollegiet also has a border relation with a prominent urban room located at the right part to engage the dormitory with the urban

texture. Besides, the plan gets in touch with the void at the top left, which can be interpreted as the plan of Tietgenkollegiet opens to new spatial interactions. In this way, the students' living space is enlarged in order not to isolate them in the dormitory building. [Figure 5.7-9]

There is a plan of Agadir Convention Centre at the right part of the drawing, which can be interpreted as a major urban room designed by OMA under the leadership of Rem Koolhaas in 1990 in Morocco. The convention center can be read as a building composed of two layers: a thick upper shell elevated by columns in different heights and a defined urban spaces under the roof. The center involves different functional programs within itself, both in the roof and under the roof. The contour lines in the plan illustrate that the open spaces defined in the building do not have a flat surface, and it differentiates the landscape of the building from its surrounding. The organically formed corridor extended through the outside of the design provides circulation in the design. It also uses its potential to organize the urban spaces in the fictitious city plan. The five other architectural precedents in the drawing take reference from this transition space. [Figure 5.7-10]

The plan drawing located at the right side of the transition space of the Agadir Convention Center can be interpreted as a tholos plan drawn in a closed rectangular space at first sight. However, it is a well-known architectural project that reflects the simplicity in Modern Architecture called Glass House, designed by Philip Johnson in 1949. The outstanding aspect of the architectural work is the facade of the building, made of glass panels from the floor to ceiling. The only private part is provided in the design by the circular closed-form containing the bathroom and the fireplace. In the fictitious drawing, the actual context of the building, which is a rural area, is reinterpreted and integrated with the main circulation street and is positioned across the public spaces: Den Haag City Hall and Pantheon. This situation composes an unusual spatial interaction in terms of privacy. [Figure 5.7-11]

Pantheon, one of the prominent religious structures in Roman Architecture, is designed by Apollodorus of Damasco between 118 and 125. The plan of Pantheon

is composed of a portico, a circular main hall called rotunda, and a circular opening at the top of the dome called an oculus. Similar to the other religious structure Santa Maria della Pace, the architectural operation of carving out plays a significant role in the Pantheon to obtain large niches and the chapel at the rotunda part. Different from its actual context, the religious structure does not contain a substantial public open space in front of it. Instead, it has a direct spatial relation with the narrow street passing in front of the portico. [Figure 5.7-12]

At the bottom right part of the drawing, a unique landscape design works in harmony with the urban spaces and architectural precedents defined in the drawing. It can be a reinterpretation of the sidewalk design lied along the beaches in the district of Rio de Janeiro designed by Roberto Burle Marx in the 1970s.[148] The design has a dynamic quality that defines specific transition spaces in different sequences. Thus, it both takes and gives spatial references to the existing architectural precedent in the drawing. It is not a common approach in *Plan Game* to include a plan of a landscape design. However, experiencing the interaction between the diverse fields of design in the fictitious city plan is precious. [Figure 5.7-13]

The end of the straight circulation corridor, starting from the Agadir Convention Center and passing through the Koshino House, ends with the L-shaped architectural plan called E1027. Eileen Gray has designed this precious work in terms of Modern Architecture between 1926-29 in France. The open courtyard of the private space of the house has a spatial interaction with the Brazilian landscape design of Marx. Besides, the common courtyard at the other facade has an uninterrupted visual continuity due to the void defined in front of it. Therefore, the architectural precedent is strictly integrated into the urban spaces in the composition. [Figure 5.7-15]

At the bottom right of the drawing, there is a seminal example of ancient Roman Architecture. This is Basilica of Maxentius included in the Roman Forum plan and

[148] Zara Muren Asla, The Landscape Architecture of Roberto Burle Marx, a documentary film: 1989, last accessed June 12, 2021, https://masterdesignseries.com/sea-ranch-test-page.

designed by Maxentius for Constantine I at the beginning of the 4th century. The basilica plan is included in the fictitious city plan by missing one row of it. However, the rest is drawn as it is without any spatial interpretation. It is interesting to observe contextual references where Basilica Maxentius is positioned in the Roman Forum plan. Similar to the ancient city plan, the closer built environment is located at the groin-vaulted porch part of the basilica in the fictitious city plan. Also, the entrance located at the upper nave of the basilica is spatially connected with the open public space as in the ancient city plan. [Figure 5.7-16]

Two different works of Paul Rudolph are spatially associated with each other in the middle of the drawing. These are the partial ground floor plan of the Art and Architecture Building at Yale University, designed in 1959 in New Haven, and Interdenominational Chapel for Tuskegee Institute in 1960 in Tuskegee.[149] The plan drawn close to the Basilica of Maxentius seems like composed of semi-open public spaces. However, the plan includes particular closed spaces, functioned as jury room, library, exhibition space, and classroom. [Figure 5.7-17]

A transition space is integrated between spaces to obtain continuity in the circulation. The dimension of the auditorium space of the chapel is reinterpreted by scaling down the area of the space and decreasing the number of seating rows. Besides, the interior vertical circulation spaces are not included in the plan drawing of the Tuskegee Chapel. The outdoor space surrounding the chapel is defined by linear hatching. It ends with two stairs in a spiraling manner associated with the two different versions of the same architectural precedent, Koshino House. [Figure 5.7-18]

There is a plan of Fun Palace at the bottom part of the partial plan of the Art and Architecture Building for Yale University. Fun Palace is a seminal cultural complex

[149] Paul Rudolph Heritage Foundation, *Interdenominational Chapel for Tuskegee Institute*, last accessed June 12, 2021, https://www.paulrudolphheritagefoundation.org/196003-tuskegee-chapel. Paul Rudolph Heritage Foundation, *Art and Architecture Building for Yale University*, last accessed June 12, 2021, https://www.paulrudolphheritagefoundation.org/195802-art-architecture-building.

designed by Cedric Price in 1964 thoroughly deserves the denotation of architectural precedent since the complex is conceptually beyond its time and has influenced the other architectural works that came after it. The terms of spatial flexibility, temporality and adaptability gain importance in the design process of the Fun Palace. Fun Palace is adaptable to any spatial requirements due to the six cranes located in the design, which change the position of prefabrication modules and platforms. The position of Fun Palace takes reference from the outdoor space of the Rudolph design, and apart from this, the plan works within itself. [Figure 5.7-19]

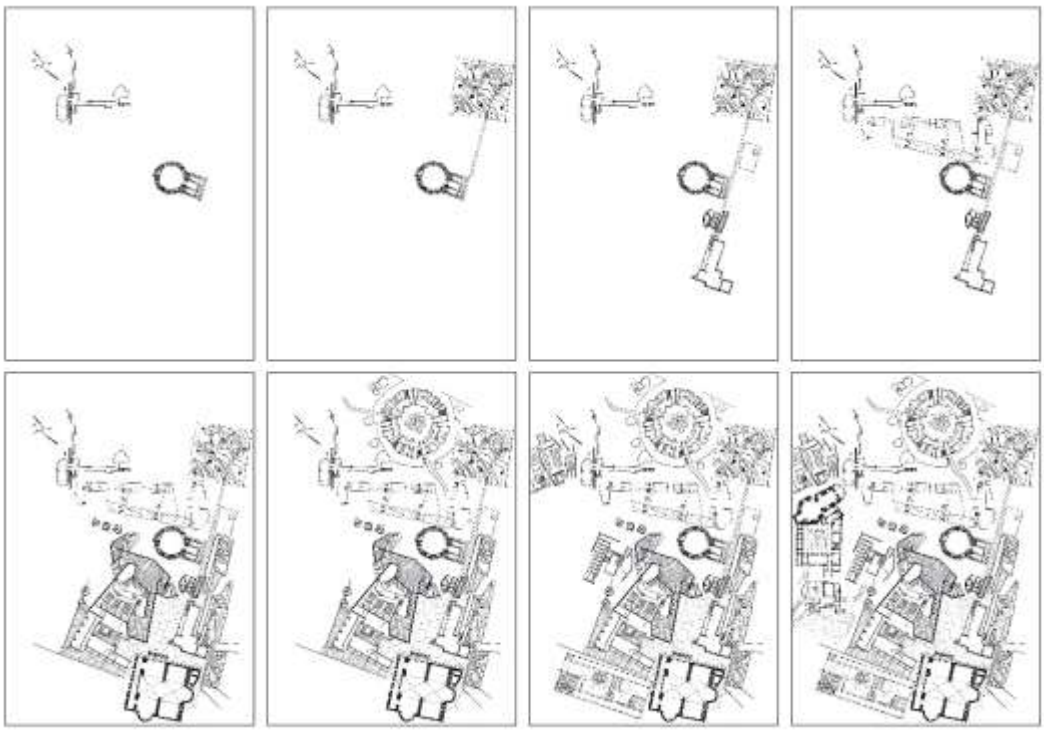

Figure 5.8 The Drawing Process of the City Plan Produced by Faculty Members. The visual made by the author.

The recombination process includes certain design decisions which are not visible in the end-product. The first contribution references three architectural precedents. Two of them are spatially correlated, and the other is drawn in another part of the drawing paper. Hence, the participant experiences how to relate architectural plans to each

other and encourages others to contribute urban context in reference to the existing architectural work. It can also be observed that the transition space defined in the architectural precedent drawn by the second participant inspires and directs other contributions in terms of the orientation of the plans. A well-known landscape design is integrated into the drawing by the fifth participant to achieve a balance between the plans of architectural precedents and the urban spaces and decrease the density of the closed spaces at the right part of the drawing.

It is also precious to distinguish the participants' different approaches towards the urban fabric in the design process. For instance, the first participant gives reference to a void defined at the top left part of the drawing by integrating a partial plan from the proposal of Parc de la Villette. Four following participants do not contribute to this space. However, the fifth one integrates a transition space into the drawing to emphasize this void and attract the other participants' attention. This void keeps empty till the end of the game. Besides, the paper is not filled by the plans of architectural precedents in full. Thus the border of the drawing is ambiguous compared to the other two drawings produced within the scope of the workshop.

5.3 The Drawing Produced by Practicing Architects

The fictitious city plan produced by the practicing architects comprises three different assemblages of fragments in terms of the design language. On the right-hand side, there are plans of perimeter blocks and the gradual dissolution of this archetype in which the technique of figure-ground is used to indicate them in the city plan. Although this workshop requires drawing the architectural plans with their interior spatial organization, the use of the figure-ground technique indicates how architects get used to this methodology to compose a city plan. At the bottom of the drawing, the plans of architectural precedents have a close interaction with the urban spaces. They both take from and give spatial references to each other. Hence the architectural works and open public spaces work together to obtain a city composition. At the top part of the drawing, architectural precedents are positioned

to the city plan by accepting the city as a tabula rasa. This design decision reminds the criticism of Rowe and Koetter towards modern architecture in *Collage City* in which they criticize the modernist planning approach for not associating the architecture with the existing circumstances.[150] In this part of the drawing, the relationship between the architectural precedents and urban context is quite limited. Thus, in this drawing, three diverse approaches towards urban fabric and architecture can be observed.

Figure 5.9 Drawings Produced by Practicing Architects within the Scope of *Plan Game Workshop Series.*

As in *Plan Game*, this drawing also includes a limited selection of architectural works regarding geography and period. The architectural works taking part in the drawing are mainly from continental Europe and designed in the 20th century.

[150] Colin Rowe and Fred Koetter, *Collage City*, (Cambridge: The MIT Press, 1984), 88.

However, they are undoubtedly seminal works in the history of architecture. The central organization is dominant in the plan drawing due to the round-formed architectural precedent positioned at the middle. The other plans take spatial references from the transition spaces of this plan drawing. Also, the circulation between the architectural plans is provided mainly through the straight streets in the urban context. Open public spaces are also defined in the city composition by using diverse hatching techniques and free-standing colonnades. The green spaces and trees are used in the fictitious plan drawing, particularly to highlight the orientation of the architectural precedents.

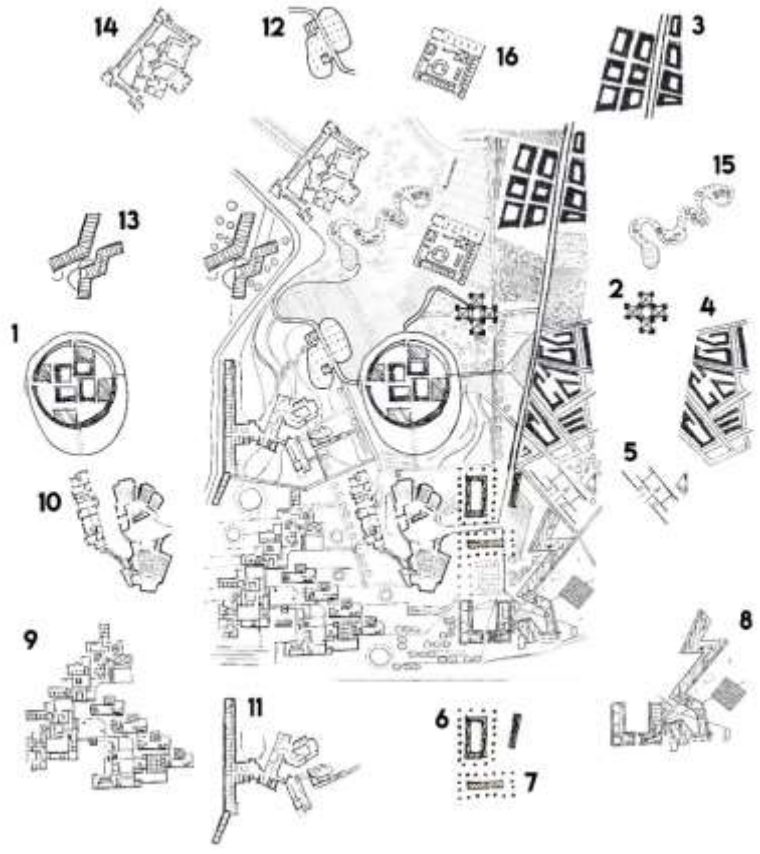

Figure 5.10 Analysis of the Drawing Produced by Practicing Architects. They are numbered according to the order mentioned in the thesis. The visual made by the author.

The four rectangular plans positioned inside the circular form and semi-open courtyards in-between the spaces belong to the plan of Benetton Daycare Center

designed by Alberto Campo Baeza in Italy in 2007. The circular form covering the main spaces is composed of two perimeter walls which include service and circulation spaces within themselves. The vestibules defined on the four facades of the architectural work direct the users to the main closed courtyard located at the middle of the drawing. Different from the original spatial composition of the Benetton Daycare Center, an elliptical open space that covers the architectural work is defined around the plan. Also, the vestibules in the plan connect the other architectural precedents in the plan drawing. [Figure 5.10-1]

Benetton Daycare Center is connected through the transition space at the upper part of the drawing to a plan composed of four square spaces having a courtyard in the middle. It is the plan of Jewish Community Center designed by Louis Kahn in New Jersey between 1954-59, and it is also named Trenton Bath House. The repetitive pure geometric forms and symmetry are dominant design decisions in architectural work. Because of the pyramidal roofs, the plan includes some crosses inside the square spaces. Also, the layout of the plan has cross-formed. At the corner of each square space, there are smaller units to support the pyramidal roof. Starting from the Benetton Daycare Center, the transition space is directly connected with the open courtyard defined in the middle. Also, the other three square forms are related to the urban spaces via narrow streets. [Figure 5.10-2]

At the top right part of the drawing, perimeter housing units are drawn using the figure-ground technique. The position of the courtyard is changed in each perimeter block. Also, the urban spaces surrounded the perimeter units are differentiated by using different hatching techniques. [Figure 5.10-3]

The main street passing through the housing blocks connects the other courtyard block. The relationship between the courtyard and streets varied gradually in the middle right part of the drawing. The plot includes diverse interpretations of the courtyard archetype. They are more integrated with the urban spaces due to the multiple alleys defined between the built environment and open courtyards. In this

part, it is possible to observe the dissolution of the perimeter block archetype. [Figure 5.10-4]

The plan drawing located at the bottom part of the perimeter blocks has domination of linearity in the overall organization. It is one of the outstanding works of Jean Nouvel called Foundation Cartier, designed in Paris in 1994. The terms of transparency and fusion play a crucial role in the design composed of only glass panels. The spatial organization and the urban space behind the architectural work can be read due to the extended glass walls. This design decision integrates and separates the architectural work from the green space and the crowded city. The dimension of the architectural precedent takes reference from the length of the street located next to it. Also, a triangular platform has been integrated into the urban space to complement the angular orientation of the streets. [Figure 5.10-5]

The alley starting from the perimeter blocks ends with the ancient Greek temples, an example of Classical Architecture. In addition to the portico part, the columns continue at the facades of the temple. Thus, the plan drawing is an example of the pseudoperipteros archetype, and the prominent architectural precedent of this organization can be the Temple of Olympian Zeus. [Figure 5.10-6]

The plan positioned at the bottom part of the plan of pseudoperipteros can be a monumental altar, and free-standing colonnades define the open space surrounding the altar. The columns at the pseudoperipteros and the altar take reference from each other. Besides, these columns define a semi-open corridor connecting the other architectural precedent to these ancient Greek architectures. [Figure 5.10-7]

At the bottom right part of the drawing, there is an inspiring work of contemporary architecture composed of four parts: the main twisted formed museum unit, U-shaped Kollegienhaus building, symbolic tower of the holocaust and the square form garden of exile. This is the Berlin Jewish Museum designed by the leadership of Daniel Libeskind together with the architects of Studio Libeskind as an example of the Deconstructivist movement in architecture in 1999. The circulation axis passing through the main volume can be read from the plan. The main volume is also

spatially associated with the diagonally intersecting streets of the perimeter blocks. Besides, U shaped baroque building serving as an entrance of the museum takes reference from the free-standing colonnades of the altar. Also, the open space in front of this old building is defined by cross-hatching. [Figure 5.10-8]

As in the fictitious city plan designed by graduate students, Amsterdam Orphanage designed by Aldo van Eyck in 1960 also takes place in the practicing architects' drawing.[151] Compared to the graduate students' drawing, the plan is drawn in detail; even the furnishing details can be read from the plan. The playing areas having a hard surface and round form surrounded by trees are also included in the plan drawing. The closed spaces and the courtyards are drawn as they are without any interpretation. Different from its actual contextual information, the site is terraced following the fragmentation of the spaces. The positioning of the trees between the old building of the Berlin Jewish Museum and the Amsterdam Orphanage also underlines the terracing. In addition, some vertical circulation elements are included in the open spaces. [Figure 5.10-9]

The complex comprises three separate volumes, including a church, a parish center, and a kindergarten at the left part of the ancient Greek temple. The transition space connecting the right part of the drawing to this architectural work is defined by the free-standing colonnades. This is the architectural work of Alvar Aalto called Holy Spirit Community Centre located in Liverpool in 1935. The spaces are physically differentiated from each other based on their functions. The main volume of the church and the parish center have fan-shaped spaces. At the same time, the kindergarten is composed of rectangular spaces. The stairs are included in the open public spaces because of the level differences in the outdoor. Also, it is connected with the plan of the architectural precedent located at the center through staircases.

[151] For more information see: pp. 98-99.

The trees take part in the open space to strengthen the orientation of the kindergarten volume. [Figure 5.10-10]

At the top part of the Amsterdam Orphanage, there is an architectural plan designed based on the spaces functionally and physically differentiated. It is the plan of Paimio Sanatorium designed by Alvar Aalto in 1929, located in Finland. To benefit from solar energy as much as possible to be used as a healing power for patients, the architectural plan composes spatial fragmentation in diverse orientations. The long rectangular volume includes private resting rooms and sunbathing balconies. The other volumes are common area, treatment space, doctors' room, and garage, respectively connecting with transition spaces. The wavy lines define the outdoor spaces. The line close to the long rectangular volume exists in the organization of the sanatorium. The other wavy lines are added to the design regarding the influence of the form of architectural precedents close to the plan. [Figure 5.10-11]

As in the fictitious drawing designed by faculty members, Carpenter Center for the Visual Arts designed by Le Corbusier in 1960-61 is included in the city plan, between Benetton Daycare Center and Paimio Sanatorium. [152] The central ramp of the Carpenter Center is directly connected to the open courtyard defined in the Benetton Daycare Center. Also, a transition space is defined by taking reference from the dimension of the central ramp to obtain a spatial continuation with the Holy Spirit Community Centre. The vertical circulation space taking part in the square volume located outside of the working spaces is connected by multiple steps to the open public space of the sanatorium plan. [Figure 5.10-12]

At the top left part of the drawing, there is a plan of a big scale residential project consists of two volumes. The forms of residential blocks remind the architectural discussion regarding the design decision from generic to specific form. Both of the residential blocks are spatially treated differently obtain diverse A specific forms. It

[152] For more information see: p. 110.

is the plan of VM House designed by Bjarke Ingels Group in 2005, in Copenhagen. The residential blocks are spatially separated from the other architectural precedents and isolated by the dominant street surrounded the plan. However, the positioning of the M-shaped block takes reference from the orientation of the plan located at the top part of the VM House and the long rectangular form of the Paimio Sanatorium. [Figure 5.10-13]

A plan of an architectural complex comprises the main U-shaped volume and five other rectangular forms positioned angularly. Due to this positioning, three diverse open courtyards are defined within the complex. The plan is also drawn in the fictitious city plan in angular orientation. Hence, it creates triangular open public spaces around the main volume. The plan drawing belongs to the Dominican Mother House, designed in 1965 in the USA by Louis Kahn. This architectural precedent is also included in one of the student projects produced for the *Exquisite Conurbation* exercise. [153] Unlike its original spatial organization, an alley is connected to the U-shaped space in the fictitious drawing. [Figure 5.10-14]

The wavy lines in the open space of Paimio Sanatorium are ended with the twisted form located at the top middle part of the drawing. Grace Farms Foundation's plan has no clear boundary to integrate the built environment into the landscape because the facades of the architectural precedent include glass panels from floor to ceiling, or they are kept as totally open. Thus, the twisted space is defined dominantly by the roof and the slab. The foundation includes multiple functions within itself, including the sanctuary, library, offices, common spaces, pavilion, and sport court is designed by SANAA in New Canaan in 2015. Also, the width of the architectural work is changed following the spatial requirement of the design. [Figure 5.10-15]

At the bottom right part of the Grace Farms Foundation, a square plan oriented angularly is composed of long rectangular columns on its facade, a circular chamber,

[153] For more information see: pp. 76.

and a diamond shape located inside the square form. This architectural precedent is the Palace of the Assembly in Chandigarh, designed by Le Corbusier in 1963 in India. The architectural work takes reference from the logic of the open plan. It includes pilotis, which allows Le Corbusier to manipulate the spatial relations and design program. Also, the ramp located at the right part of the circular chamber provides vertical circulation in the architectural work. The open space outside of the plan is defined by using cross-hatching referencing the orientation of the columns on the facade. This is the only impact of the architectural work on the urban space. Other than that, the plan drawing gives no reference to the urban context. [Figure 5.10-16]

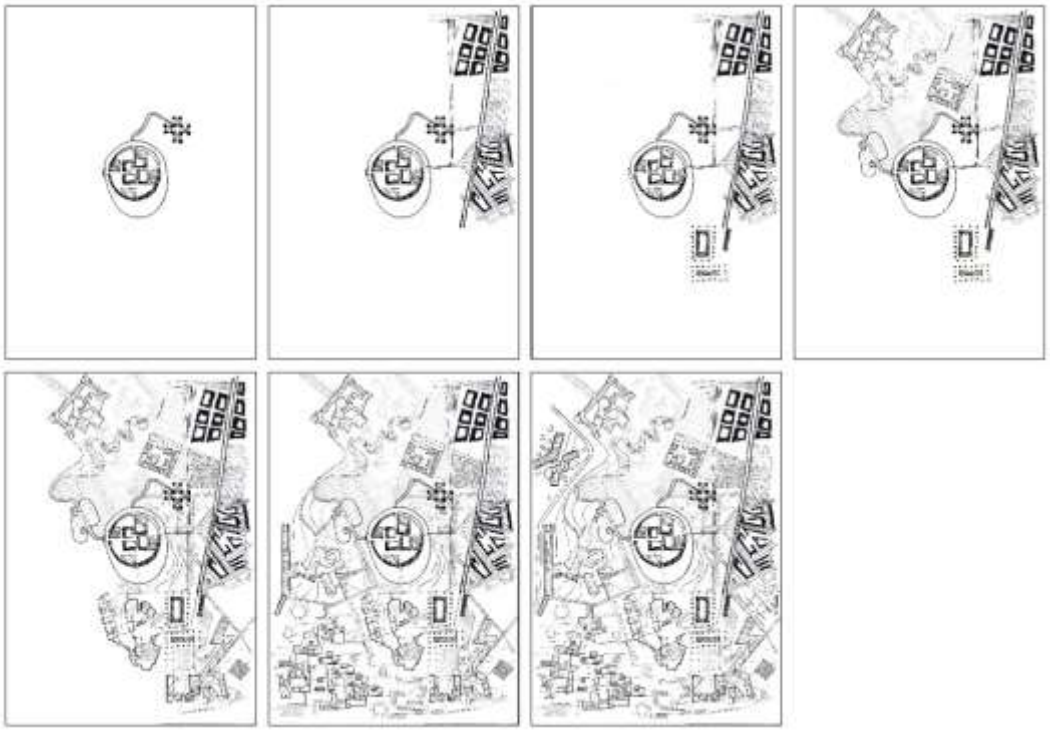

Figure 5.11 The Drawing Process of the City Plan Produced by Practicing Architects. The visual made by the author.

Unlike the drawings produced by graduate students and faculty members, the recombination process in the practicing architects does not attempt to direct the following participants by giving some spatial hints. They focus on one particular part

in the drawing and fill it. Therefore, throughout the drawing, the participants continue to fill the city plan in order by focusing on a specific area. Compared to other drawings, this city plan has a limited interaction between the spaces drawn by different participants in the making of the city process. The drawing process starts from the center with a circular form, including four main transition spaces. Also, one of these defined corridors is used as a passageway to spatially connect the architectural precedent positioned at the upper part by the first participant. After this intervention, the second, fourth and fifth participants of the drawing similarly relate the architectural spaces by referencing these transition areas.

The directionality and orientation are essential terms in the recombination process of this drawing. Almost all participants pay attention to underline this notion in the spatial organization. For example, the third participant integrates an altar plan to strengthen the angularity of the street defined before. Even the selection of the architectural precedents located at the bottom right part, Foundation Cartier and Berlin Jewish Museum by fifth and seventh participants can be interpreted as having a purpose to highlight the dominant angular organization. It is also significant to observe that almost all lines drawn by the fifth participant take reference from the existing plans in the city composition. The fifth and sixth participants benefit from positioning the green spaces and the trees regarding this objective. The fifth participant also makes an effort to strengthen the central organization in the city plan by drawing some wavy lines to the open space surrounded the circular form at the center.

5.4 The Outcomes of *Plan Game Workshop Series*

Plan Game Workshop Series was carried out in accordance with many different purposes. The first of these is to examine whether thinking based on architectural typologies and architectural precedents is still an effective method in terms of

architectural production or not. Since *Plan Game* is a collective exercise played in the 1950s, the architectural approaches of that time and today's expectations in terms of the making of the city may differ from each other. So reviving this game might be an appropriate answer to the doubts on the validity of integrating architectural typologies and precedents in the architectural production process. The feedback obtained from the participants specifies that the participants have researched many architectural precedents during the plan selection step, which enables them to refresh their knowledge about the architectural typologies and precedents during the recombination process. They evaluated this game as including both creative and informative processes. Since the architectural precedents are not only a historical term, they also have a generative and trans-historical aspect, integrating them into the design process is not a method that will become obsolete over time.

Also, the workshop aimed to observe how participants spatially integrate the plans of architectural precedents and public spaces in the fictitious city plans. *Plan Game* not only focuses on architectural typologies and precedents, but it also places equal emphasis on their togetherness in the composition. Thus, instead of a random selection of the architectural precedents, the end-products show that the participants examine the spaces owned by the architectural precedents in detail. They position the plan of the architectural precedent into the plan drawing by relating it to the already existing spaces. Thus, at the end of this workshop, different spatial responses are observed regarding the relationship between architecture and urban spaces.

In the drawing produced by graduate students, urban context and architectural precedents are integrated and associated with each other potently. The composition is organized concerning the spatial relations between the indoor and outdoor spaces. The collective drawing produced by faculty members includes less urban space than the other two fictitious city plans. They prefer to associate the plans of architectural works mostly. Due to this dominant approach, the drawing resembles the *City of Composite Presence*, in which the urban spaces are defined only by the in-between spaces of the architectural plans. In the imaginary city plan of practicing architects, it is interesting to observe three diverse approaches towards the interaction between

architecture and city composition. It includes the figure-ground technique at the right part, examples of architectural precedents and urban texture integration by referencing all the spaces to each other at the bottom, and isolated architectural plans at the top part of the drawing. Therefore, the workshop enables individuals to observe different approaches towards the making of the city.

Another purpose of organizing this workshop was to observe the geographical and periodic distribution of the architectural precedent selected to be included in the new drawings produced in the scope of this workshop. The domination of European countries in the selection process of architectural precedents taking part in *Plan Game* is removed from the fictitious city plans produced within the scope of *Plan Game Workshop Series*. Rather than indicating all architectural precedents from Europe, especially Italy and France, the participants include other countries in the geographical distribution. In the drawing of graduate students, the architectural plans located in Egypt and the USA are integrated into the imaginary city plan. The faculty members enlarge the range of selection by involving Copenhagen, Brazil, Japan, United States, the USA, and Morocco. The practicing architects integrate the architectural precedents in Finland, Copenhagen, and India. Even this workshop was organized in Turkey with the participation of the Turkish architects, and it is an unexpected result to observe that the architectural precedents in Turkey or designed by Turkish architects are not included in any drawing.

The drawings produced in the workshop present a wide range of architectural works regarding periods. Besides, the plans taking part in the drawings are mainly designed in the 20th century. But, they are undoubtedly seminal works in the history of architecture. Also, some architectural works like Amsterdam Orphanage and Carpenter Center are repeated in the selection group of plans in the drawings produced within the scope of workshop. It is interesting to distinguish that most architectural precedents in fictitious city plans have traces of Modern and Contemporary Architecture. They especially integrate the outstanding examples of this period having enormous impacts in the history of architecture: for instance, Centre Pompidou, Barcelona Pavilion, Church of the Light, Jubilee Church, Glass

House, Fun Palace, and Berlin Jewish Museum, and so on. This approach can be interpreted as related to the pedagogical education taken in design studios by participants. These architectural works are the common examples of case studies given during architectural education. Hence, this approach can be interpreted like the participants tend to reflect the case studies affecting their educational backgrounds, which may have a crucial impact on the drawing process.

It is also interesting to observe unexpected approaches in the production process of the workshop. The original drawing of *Plan Game* does not include a partial plan of an architectural precedent, and the architectural plans are presented as a whole. Integrating partial plans is a common point in the fictitious drawings produced by graduate students and faculty members. In the drawing of graduate students, one of the participants associates the load-bearing walls of Fallingwater House to the urban context. Also, a fragment from the proposal of Zaha Hadid for the Parc de la Villette is integrated into the collective drawing produced by faculty members. Giving only some architectural details of architectural plans directs observers to ponder over the purpose of this act and opens new ways of approaching the fictitious composition. This approach may purpose to indicate only the prominent aspect of architectural work, underlying thoughts of it, or in order not to affect from the limitations in scale of the drawing.

The feedbacks from the participants were also very positive. Some of the graduate students' session participants stated that they thought extensively and did research to decide how to contribute to the drawing created for the workshop. Also, they indicated that they have learned quite a lot from this process but cannot include all of them in the drawing. Thus, to analyze the effects of *Plan Game* on the participants, it is not sufficient to evaluate the end-product alone. *Plan Game* exercise provides more than the end-product by triggering the participant to ponder over the interaction between the city and architecture and associate new spatial organizations. Some of the faculty members' session participants indicated that they had not drawn architectural plans by free-hand for a long time, and they enjoyed taking part in this work, which includes many design ideas and unlimited possibilities.

They also stated that it was gratifying to guess the architectural precedents' names and architects already existing in the drawing. Some practicing architects who participated in the workshop stated that *Plan Game* is not an easy game requiring much effort to relate the plans of the architectural precedents that they want to draw into the existing context. On the other hand, most of the participants, who did not know anything or had limited knowledge about *Plan Game* until the workshop was held, stated that they were eagerly waiting for the end-products, and *Plan Game* was a valuable exercise questioning the relationship between the city and architecture. Therefore, the feedbacks demonstrate that the ideas behind *Plan Game* and the purpose of relating different fields of design in one imaginary city plan are quite influential on the participants.

CHAPTER 6

CONCLUSION

The urban spaces and architecture are not two irrelevant notions working separately in the making of the city. Instead, they work together to compose a whole and have a continuous interaction between the spaces. In the design process and the representation of the city, it is essential to approach equally both of these two fields: architecture and urban design, instead of bringing one to the fore. Therefore, they need to be designed and represented in the same technique. Also, the public spaces, which enable to conserve the spatial continuity, have a vital role in observing and experiencing the relationship between architecture and the city. In this regard, the design approach and drawing technique of *Plan Game* can direct individuals to ponder over the relationship between architecture and the city. It offers an alternative to the conventional figure-ground drawing technique by depicting the interior spatial organizations of architecture instead of emphasizing the building's footprint. Hence, rather than drawing a sharp boundary between architecture and the urban context, the interior and exterior spaces begin to dissolve into each other in *Plan Game*. Hence, the drawing technique and design approach of *Plan Game* enables to design and observe the spatial context as a whole.

In addition to the potential of increasing the interaction between the architecture and the urban context that *Plan Game* offers towards the making of the city, this exercise is also essential in analyzing architectural precedents and making use of them in the design processes. It associates various architectural typologies from a wide range of geography without the limitations of reality. Hence, it offers an imaginative design field to interact with different architectural plans from diverse periods and countries. The analysis of the existing architectural precedents in the drawing and responding to them by integrating new spatial organizations are crucial steps offered in *Plan*

Game. Therefore, this exercise provides an opportunity to increase the knowledge of architectural precedents and benefit from them to solve design problems in the creative recombination process.

The outcomes of this research assert that the thought of *Plan Game* includes various influences on architectural education and practice. At first, the technique used in *Plan Game* has the power to interact the architecture and public spaces to each other. The drawing method and the underlying ideas of *Plan Game* eliminate the problems occurring in total design and negative results of the conventional planning attempts. *Plan Game* does not underestimate the status of architecture in the drawing compared to the figure-ground maps, indicating only the footprint of the architectural plans. Instead, *Plan Game* depicts the architectural works by remarking their interior organizations and includes the architectural plans to the drawing by composing relation with the urban spaces. Therefore, this exercise strengthens the relationship between the figure of architecture and the ground of the city. Due to the objective of *Plan Game*, the terms of figure and ground start to be dissolved and work in reference to each other in the drawing.

The study also points out the crucial role of *Plan Game* in the pedagogical education of students of architecture. The analysis of the students' works shows that *Plan Game* can lead students to internalize possibilities of diverse spatial interactions towards architecture and city design. Analyzing architectural precedents and trying to find spatial relationships related to its new context in the drawing, and giving architectural responses to existing plans are significant steps that this exercise offers. Therefore, *Plan Game* is an essential architectural exercise that can improve students' approach to the relation between architecture and the city. Students can experience how to handle the problems that occur in the interaction process of architectural works to the urban context. They can improve diverse approaches towards the making of the city by using this exercise. The assemblage of architectural fragments in the drawing enables participants to observe new spatial organizations and led them to give respond to the already existing spatial definitions. Besides, it helps them learn how to benefit from architectural precedents properly in design

processes as an instrument of architectural design. Thus, *Plan Game* can be reconsidered as a pedagogical method in design studios.

It is another outcome of the analysis of *Plan Game* and the student projects referencing this exercise that the essence of *Plan Game* is close to the design problems of the project assignments given in architectural studios. This exercise includes comprehensive design problems in associating indoor with the outdoor spaces, responding to the contextual references to integrate the urban spaces into the design process, and learning from the history of architecture by analyzing case studies. All of these aspects of *Plan Game* are the design problems that must be dealt with during the design process in design studios. The exercise also makes students experience the freedom of design without the limitations of reality and get familiar with the commonly used architectural typologies. It reflects the collaborative environment of architecture and directs students to cope with the collaboration problems. Hence, *Plan Game* directs students to notice the potentials of designing the whole through the precious contributions of individuals having diverse perspectives. In this respect, benefitting from *Plan Game* and its teachings offer an alternative approach to students for the possible design problems they need to deal with in their academic and professional lives.

Furthermore, analyzing these drawings and distinguishing the design decisions taken during the production process, as another informative phase that *Plan Game* offers. In this process, the observers can also improve their knowledge regarding architectural precedents and the relation between architecture and the city. As a graduate student, the analysis process of the drawings and interpreting the spatial relations have improved my knowledge of architectural precedents and the way of reading the city and led me to realize the importance of the terms: contingency and ambiguity in the design process to obtain creative works. This personal experience strengthens the idea that *Plan Game* offers an effective method to enhance the knowledge towards spatial organizations. As a result, it can be included in the architecture programs' design curriculum as a pedagogical education tool.

The theoretical analysis of *Plan Game* and student projects and the outcomes of the workshop developed in this thesis can provide a basis for further studies to integrate architecture and urban context in the making of the city. Correspondingly, the thesis examines how *Plan Game* can be reconsidered as a pedagogical tool in the design studios. To expand the scope and impact of the research, in future studies, the participants can also analyze the spatial relationships including in the drawing instead of just producing the drawing. Since the analysis of the exercise presents an exceptionally beneficial and informative process, the addition of the analysis to the design process can lead the participants to benefit from the underlying thoughts of *Plan Game* deeply. The end-products also can be exchanged between the groups; thus, students can interpret the spatial contributions in the other fictitious city plans. Also, in order to contribute to the literature of architecture, future studies can intend to access the archive of Colin Rowe, which perhaps includes other unknown versions of *Plan Game*.[154] *Plan Game* includes many aspects needed to be uncovered and benefited from because it is a relatively understudied subject in architecture literature. This research aims to contribute to the approaches towards making of the city by uncovering *Plan Game* and beyond.

[154] During the archival studies carried out within the scope of the thesis, the archive of John Hejduk at the CCA in Montreal was also reached, but no document on *Plan Game* could be acquired from this archive.

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