MAPPING MODERN CAMPUSES:
"AN IMAGINATIVE PROJECTION BACKWARD IN TIME"

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

BY

Yurdanur Melike Yürekli

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

JANUARY 2023

Approval of the thesis:

MAPPING MODERN CAMPUSES:
"AN IMAGINATIVE PROJECTION BACKWARD IN TIME"

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ABSTRACT

MAPPING MODERN CAMPUSES:
"AN IMAGINATIVE PROJECTION BACKWARD IN TIME"

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January 2023, 191 pages

This study aims to map a specific network of modernism that embodies operational projections. Based on Genz and Lucas-Drago's definition, mapping is understood as a technique to generate a representation of spaces and places of the "actors" and their relation to each other. Mapping modern campuses, here, are interpreted in multiple contexts and considered both a research tool, an interface, and a visualization problem for revealing the network. University campus as an urban model particularly after the World War II period between the 1950s-1970s corresponds to the total complexity of modernism with projections from and towards the spatio-temporal contingencies. The narration of campus case composes a unique assemblage with actant layers ranging from the architect's intention, institutional requirements, regional and physical environment, social and political drive, cultural context, material availability, and further usage by students, professors, and personals. This study configures after multiple mapping trials with potentials, limitations, and shortcomings that occur in both representational and archival frames.

Keywords: Mapping, Modern Campus, The Network of Modernism, Architectural Diagram, Projection

ÖZ

MODERN KAMPÜSLERİN HARİTALANMASI: "ZAMANDA GERİYE DÖNÜK YARATICI BİR PROJEKSİYON"

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Tez Yöneticisi: Prof. Dr. Ayşen Savaş

Ocak 2023, 191 sayfa

Bu çalışma, mimari ve tarihi projeksiyonları operasyonel olarak somutlaştırarak modernismin bir alt ağını haritalamayı amaçlamaktadır. Genz ve Lucas-Drago, haritalamayı, aktörlerin, mekanlarının ve yerlerinin hem kendilerini hem de birbiriyle olan ilişkilerinin temsillerini oluşturma tekniği olarak tanımlar. Bu referansla ağın ortaya çıkması için modern kampüslerin haritalandırılması birden fazla bağlamda hem bir aratırma aracı, hem bir arayüz, hem de bir görselleştirme problemi olarak ele alır. Bir kentsel model olarak üniversite kampüsü, özellikle II. Dünya Savaşı sonrasındaki 1950 ve 1970 yıllar arasındaki dönem odağında değerlendirildiğinde sosyo-mekansal durumlar ve bunlara yönelik projeskiyonlar ile modernismin kompleksitesine cevap vermektedir. Bir kampüsün hikayesi, mimarın hayali, kurumsal gereksinimler, bölgesel ve fiziksel çevre, sosyal ve politik dönemin çıktıları, kültürel bağlam, malzeme, ekonomi gibi imkanlar ile yaşayanları ve onların kullanım pratikleri ile oluşan etkin ve edilgen katmanlarla benzersiz bir asemblaj üzerinden değerlendirilerek gerçekleştirilen haritalama denemeleri, hem temsil hem de arşiv çerçevesinde ortaya çıkabilecek bilgi üretimi ile kampüs ağını okumayı amaçlamaktadır.

Anahtar Kelimeler: Haritalama, Modern Kampüs, Modernism Ağı, Mimari Diyagram, Projeksiyon

to dreams,

ACKNOWLEDGMENTS

First and foremost, I wish to express my deepest gratitude to my thesis supervisor Ayşen Savaş for her guidance throughout this process. Possessing a unique understanding of architecture and seeing a potential value in the work that does not yet exist encouraged me to carry on and complete this thesis.

I express my sincere thanks to my jury committee members Bilge İmamoğlu and Ela Alanyalı Aral for their valuable and useful critics. I want to express my appreciation to Assoc. Prof. Dr. Pelin Yoncacı Arslan for her support during my graduate years.

I am thankful to my friends Ayşe Setenay Özsoy, and Yasemin Filik as colleagues who were always there when I needed them. I also want to thank Nilra Zoraloğlu, Merve Sipahi, and Merve Özkul, who accompanied me since the very beginning of my adventure in architecture. I am also very thankful to everyone whom I crossed paths with, who patiently listened and contributed to my thoughts during my professional life, and my Erasmus time in Politecnico di Milano.

I must be a lucky person to have by my side best friends like Gökçe Yetişer and Damla Erden, who have always stood by my side, cheered me up, and dreamed of being mermaids together. They are everything one should ask for in a friend. This journey would have been much harder without their presence. My gratitude also goes to Talha Yazıcı for his kind support.

Last but not least, I want to express my gratitude to my family although it would never be enough. I am lucky to have my father and his endless, limitless care, and unconditional love. Thank you for being there and supporting every decision of mine. I am thankful to my brother Murat, his wife Gamze, and my sisters Duray and Dila, for their everlasting trust. Words cannot express how grateful I am to have the warm memories of my lovely mom, who made me believe in myself and raised a strong woman.

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CHAPTER 1

INTRODUCTION

This study is part of an ongoing research project entitled "Campus Utopias" and an outcome of the related graduate courses that are given in the architecture program. [1] The "Campus Utopias" is a design research project conducted in collaboration with METU and TU Delft Faculty of Architecture and Built Environment which focuses on iconic examples of modern architecture, in particular university campus cases starting from the Middle East Technical University (METU) Campus.[2] The main agenda of this research is to support the overarching strategy developed by the METU-KIM conservation team: "conservation by documentation and raising international awareness." [3] Each semester METU and TU Delft groups work on different campuses simultaneously for extensive research documentation.[4] As stated in the syllabus of 2021 the main agenda of the courses are the development of an operational research approach for the comprehensive study of the selected university cases. These selected cases as a part of modern campuses are the representations of

[1] The graduate courses conducted by Prof.Dr. Ayşen Savaş particularly focused on this subject, between the years 2017- 2021 at METU Department of Architecture within the agenda of a joint program with TU Delft. Course names are Arch 524 Architecture and Different Modes of Representation, Arch 505 Advanced Architectural Design Research / Campus Utopias, and Arch 571 Directed Studies in Environmental Design. The research topic has derived from the process that experienced as a student and assistant in these courses.

[2] METU as a campus case is chosen as a continuation of the conservation project started with the support of Getty's Keeping It Modern Project (KIM).

[3] Ayşen Savaş et al., "Research and Conservation Planning for The METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici Ankara, Turkey" (Ankara, 2020).

[4] The cases are selected from the first list of the Campus Utopias project which is the list of cases that are in the Getty Foundation Grant and called as Red List in the research process.

a complex and international architectural culture. Relatively, the importance of mapping as a tool and method for this study is defined.

> "Mapping" these campuses, understanding the reasons behind their establishment, interpreting their morphological and architectural formations, and learning from their architectonic values at every scale, require an overarching methodology. [5]

Themes are introduced to understand the dialogues between academic ideals and architectural urban models, as well as to discuss the campus as a city with administrative, architectural, and urbanistic visions. The courses explore the architectural and social compositions coming from the tangible and intangible local and global forces. The relationships between the campus with ideal living and learning environment and society as the academic community are traced throughout each case. The main approach has established with respect to the modernist architects[6], and their vision towards campus architecture which is mentioned as the university campus was a challenging experimentation ground. There are four scales addressed; territory/city, campus/landscape, building, and detail/ornamentation are significantly important for the courses and the research process. In the introduction of the Spring 2020-2021 syllabus, the four scales have mentioned as "We will follow a typological approach with attention to four different scale levels and their interconnections: from territory to the campus to the building to the interior and finally to the 'ornaments'." Moreover, throughout the courses, collective sessions to exchange information and working methods are conducted to understand the parallelisms and the differences of cases. Central architectural themes are introduced for a comparative ground. The themes are unity-diversity, monumentality-utility, distancing-connecting, processes-practices, and resources. During the course

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[5] In the syllabus booklet of the graduate course Arch 505 Spring 2019-2020 conducted by Prof.Dr. Ayşen Savaş.

[6] In the syllabus booklet of TU Delft Spring 2020-2021, the mentioned modernist architects are Pierre Jeanneret, Vilanova Artigas, and James Stirling

process these themes are discussed and further evolved. The outcome of the courses is the compilation of written and visual documents besides a video.

Before the graduate courses, the “Campus Utopias” research process starts with searching campus cases that are suitable for the project agenda. Even the listing of the searched cases problematizes the further research process and raises questions on the visualization of the information medium. Moreover, entering relational data, structuring the information, retrieving the information in the project agenda reveals such complexity that led the topic of this thesis study as mapping, a visualization problem of the collected data with respect to the Campus Utopias Project.

1.1 Towards Mapping as a Research Tool

The “Campus Utopias” course started with the preparation of an initial study list. The initial list included 15 campus cases which they have granted by Getty within the agenda of Keeping It Modern. This list was converted to a simple spreadsheet as an MS Excel file to extend the information spheres of the cases and to expand the campus examples during the research process.

Microsoft Excel is a spreadsheet[7] computer application created by Microsoft in 1985. It is used for computation, organization, analysis, and storage of data in tabular form. The table is an interface using a grid of cells arranged in numbered rows and letter-named columns to record and analyze numerical and statistical data, and to organize data manipulations. Google Spreadsheets is an online version of the excel program which provides to link websites and digital materials for further research. Also, the online version is editable by many users synchronically. The list in spreadsheet

[7] "spreadsheet". Merriam-Webster Online Dictionary. Retrieved 17 October 2022.

medium as the base data set of the project is conducted during the preparation process of the international joint course titled "Campus Utopias"[8].

The first step for extending the information sphere of the list is to research new campus cases and enter information. For structuring the data entry, excel format frames initial matrices which are found beneficial to categorize the core information pieces of campus cases. These categories have been chosen to introduce the basic knowledge about each case. Categories are ordered from the name of the campus and followed by the name of architects, design dates, locations, site models, photographs, drawings, and historical briefs.

By virtue of the 'spreadsheet' medium itself arranging in order, the reading of the list in a comprehensive manner is limited by the way the data is transferred. The introduction of a new category depending on the differences between the newly reviewed campus cases' complexifies the data entry and the information retrieval for comparative reading. During the development of the research, the campus list reached up to 150 cases, however, the structure of the list raised questions considering its inevitable frame towards the order of information. The lack of comparative reading simultaneously in more than one category also challenged the aims of the research. Moreover, the excel cells flatten the information by detaching its importance which can be problematic for the research agenda.

By far one of the critical points about the medium is adopting visual data. The image of the visual data within the boxes of textual information could not transfer its representational, architectural, or archival significance. Also, increasing the number of attached visuals in multiple categories makes difficulties in terms of seeing visuals versus reading the textual information. The dimensions of attached visuals need to be adjusted accordingly to dimension of cells, even so information layers of the

[8] Under the supervision of Prof. Dr. Ayşen Savaş, graduate students Ayşe Setenay Özsoy and Y.Melike Yürekli examined the list with detailed information during the six-month research period and help expending the list with new campus cases.

visuals varied scale-wise from the detail drawing to master plan which cannot be standardized for the appropriate appearance of the spreadsheet. If the adjustments are made focusing on the legibility of the visual, the dimension of screen interferes with the reading of multiple cases at one gaze. Even, this problem is an issue from the first ten examples without visuals.

The following study for the order of 150 and more case as a list is classified under subthemes by Savaş. These subthemes start to frame the knowledge sphere and reduce the complexification of interlinked data sets. Since the project is a part of the ongoing Getty KIM Grant, the other educational spaces awarded by Getty KIM are compiled under a list. Furthermore, the cases that are architecturally evaluated as "megastructures" have been listed as a second category, another grouping was made under the subtitle 'unique cases and the rest was called simply a "bulk list". This generation of subthemes provided a base for generally 10-20 campus cases. For example, the list of campuses awarded Getty KIM Grant is called as the "red list" was composed of 15 cases: Middle East Technical University, Obafemi Awolowo University, Universidad Laboral de Cheste, The National School of Art, St-Brendan's Community School, Punjab University, Saint John's Abbey and University, Technical University Delft, Monasterio Benedictino de la Santisima, Fundaçao Oswaldo Cruz Arthur Neva Pavilion, Bauhaus Dessau, Universita degli Studi di Roma "La Sapienza", University of Leicester, Sao Paulo University. The complexity first set by the campuses was not granted by Getty but the individual buildings in the campuses granted. Even this differentiation triggers the question these campuses can be considered as the modern campus cases. Thus, throughout the research period of the project, the list is regularly updated. Beyond that the information was wide range, and the limitation of the medium became a challenge.

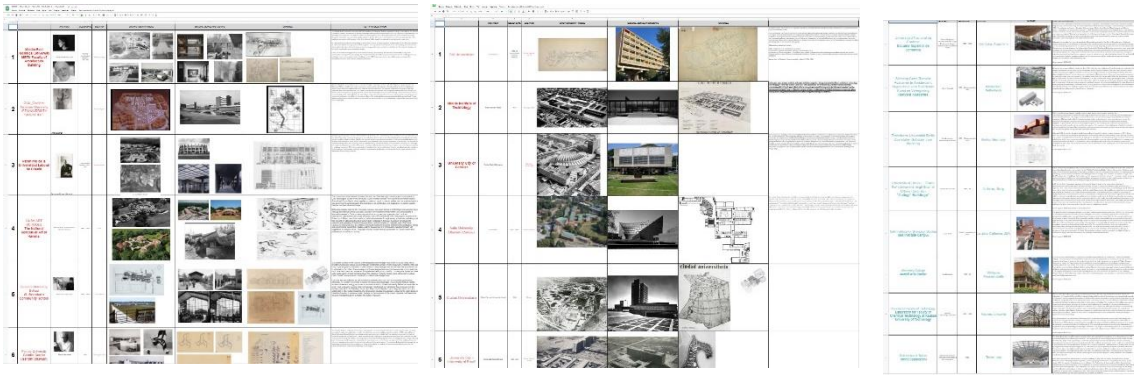

Figure 1.1. First drafts of the Campus Utopia research prepared by Prof. Dr. Ayşen Savaş.

The limited numbers of campuses in the groups are still represented and studied in the excel spreadsheet format which problematizes to show network links originated from unique assemblages of each campus. Although sub-list provides a more comprehensive look, selecting and discarding to assembly the list are two cyclic ordering practices that establish a new layer in research. For instance, the importance of the cases on the 'red list' are already legitimized with a conservation grant. Thus, the documentation of the information of the cases could be more extensive than the other cases.

The focus of this thesis is mapping to develop an operation for the listed campus in the 'Campus Utopias' project. The definition offered by Genz and Lucas-Dragon[9]

[9] Genz, C., Lucas Dragon, L. Decoding Mapping as Practice: An Interdisciplinary Approach in Architecture and Urban Anthropology. The article is released as one of the outcomes of the Urban Ethnography Lab's projects. The Urban Ethnography Lab is an initiative by scholars from the University of Toronto's Ethnography Lab and Humboldt University's Georg Simmel Center for Metropolitan Studies and the Department of Social and Cultural Geography from Humboldt-University of Berlin. Dr. Carolin Genz is an urban anthropologist and lecturer at the Department for Cultural and Social Geography at Humboldt University, and Dr. Diana Lucas Dragon an architect and lecturer at Technische Universitat Braunschweig continues their research in this lab for spreading the value of ethnographic

shows that mapping is a technique not only to represent spaces and places but also ‘actors’ and their relation to each other. Actors here are defined as power bodies that are involved in the design and construction processes and the establishment of the institution. Tracing their impact spheres and notions project upon some of the visual data; photographs, drawings, diagrams… Defining mapping as a practice, Genz and Lucas-Dragon explain their approach applied to architecture and urban anthropology. Their mapping technique deals with complex data that an excel spreadsheet medium cannot represent. Since they embody an interdisciplinary approach that looks over both the textual, visual information together with the notion of those different disciplines. According to them, mapping is entangled ‘data with a fragmented mixture of observations, interviews, notations, plans, and visual representation”. Their term has been elaborated with the term projection to understand the connections between data and its origin and its transformation towards an architectural visualization.

1.2 Projection

The above-mentioned “projection” is reconceptualized with its potential to become both a theoretical and a practical tool for data collection. It is evaluated as a knowledge operation for understanding the tangible and intangible information spheres of an architectural entity. Calling Micheal Hays’ words ‘an imaginative projection backward in time’[10] illustrates the historical framework of the study. Projection as a term is also emphasized by Robin Evans; “architectural projection”. This study learns from these two interpretations of the term to map a selected number of modern campuses. The material included not only the names of these architectural

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and qualitative urban research and adapting ethnographic research methods to suit the complex demands of contemporary urban settings.

[10] Hays, K. M. (1984). "Critical Architecture: Between Culture and Form." Perspecta 21:15-29 “Starting from the documents, recorded actions and artifacts which are the base material of the historical world, understanding is seen as essentially a self-transposition or imaginative projection backward in time.”

entities but also architectural drawings and diagrams, photographs, and short descriptive notes of the researchers. In this regard, projection as a research tool operates to map not only the physical properties but also the actors (architects, founders, ….) and their connections. The operational scale of projection is also valuable since it sets interconnections that are able to reach the collected data diachronically or synchronically.

Until one of the lists is studied within the framework of the "Campus Utopias" courses[11], the research process of the project and the mapping complexity lay on the evaluation of the information equally in cells according to the selected categories. The ongoing research and course outcomes bring broad information about the selected campus cases which cannot be reduced to the expansion of one category. They also show that distinct aspects of each campus complexify any classification operation. Beyond its educational function from its establishment as an institution, with the architectural requirements, regional, and physical environment, social and political drive, and the cultural context, campuses compose unique assemblages. The period of Modern Campus project was limited after the World War II period between the 1950s-1970s. As stated by Tom Avermaete, this time is significant with "the societal turn increasing demand for educational spaces to have coherent correspondences to the built environment in multiple scales as stated in the course syllabus".[12] Technological and political developments in different fields also keep

[11] The graduate courses conducted by Prof.Dr. Ayşen Savaş particularly focused on this subject, between the years 2017- 2021 at METU Department of Architecture within the agenda of a joint program with TU Delft. Course names are Arch 524 Architecture and Different Modes of Representation, Arch 505 Advanced Architectural Design Research / Campus Utopias, and Arch 571 Directed Studies in Environmental Design. Prof.Dr. Ayşen Savaş particularly focuses on modern campus subjects. As a student and one of the assistants of the courses, strong engagement in the research process and outcomes leads this thesis study.

[12] The course Arch 505 is conducted with this understanding which leads the general discussions and the research of each case throughout the semester. For further information see.

with the higher education agenda. Turner (1984) in his book *Design and Ideals: Campus. An American Planning Tradition* gives the importance of campus planning from two aspects. The first one is by defining campus as a 'city in microcosm'. The second one is based on campus planning as an expression of the American social and utopian vision. He states that the desire to create an ideal community is realized with the campus architecture which shows the embodiment of an institution's character.

In the glossary of SCUP (The Society for College and University Planning), campus planning is defined as "planning that outlines the long-term direction of the physical campus." The parts of campus should have open spaces, buildings, non-motorized circulation, motorized circulation including public transportation, and utilities. The definition underlines the institution's academic, research, and outreach mission. In this regard, campus planning is complex with its urban model and scale complexity and with its institutional agenda. The overall discussion about campuses shows that modern campuses are a part of network of modernism which shows notable references that is beyond stylistic discussion but continues as a behavior/ approach to shape modern society. In this regard, architectural characteristics of campuses with unique assemblages cannot be reduced to the embodiment of a style. Yet references can be read as derivatives of the in-between, 'difference', 'repetition', 'iteration' or the 'interval conditions.[13]

1.3 Actor Network Theory

Here, the term 'network' is used and elaborated with reference to Actor Network Theory or ANT. Actor Network Theory, or ANT is a theoretical and methodological

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Avermaete, T. (2018). The socius of architecture: Spatialising the social and socializing the spatial *The Journal of Architecture*, *23*(4),537542.https://doi.org/10.1080/13602365.2018.1479353

[13] Oosterling, H. and Plonowska Ziarek, E.eds., 2011. Intermedialities Philosophy, Arts, Politics, Lanham, Maryland: Lexington Books, 2. Grosz, op.cit., 92.

approach that posits nothing in the social and natural worlds exists outside of its constantly shifting network relationships.[14] Latour studies whether natural, technological, human, or abstract things are in interaction. These interactions construct a system in that all things are active members. Based on these members of the system which can be called "actants", can assemble a group. These interconnected actants in a group result in a network. A similar definition is set by Deriu and Kamvasinou.

"Actor-Network-Theory configures all things of any scale – human or non-human, conscious or non-conscious- as actors that interact and comprise a study network." (Deriu, D., Kamvasinou, K. 2016) Additionally, ANT tries to designate how actants, either actors or agents, have a position through their connections, regardless of the scale they are associated with. Firstly, an actant can be any entity that is the source of action.[15] The importance of actants without their interactions are perceived as equal. While actants are valued by the way of their interaction and spectrum of interaction in the system. Two terms, intermediaries and mediators are introduced to appoint the level of interaction that causes changes. Another significant aspect of ANT is that Latour states ANT has no a priori order relation. "It makes absolutely no assumption whether a specific locus is macro- or micro- and does not modify the tools to study the element 'a' or the element 'b'."

He presents Deleuze's and Guattari's rhizomes as a reference (Latour, B. 1970), where he explains the term "choices" as a tool to produce a new ontology, a new topology. In that sense, ANT theory tries to explain how material-semiotic networks come together, act, and are perceived as a whole. Latour sees that these networks are also transient and exist in constant making and re-making. Thereafter, establishing the definition ANT is outstanding for compiling modern campuses.

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[14] Latour, B., 2005. Reassembling the Social: An Introduction to Actor-Network-Theory. Oxford: Oxford UP.
[15] Jackson, Sharon (2015). "Toward an analytical and methodological understanding of actor-network" (PDF). Journal of Arts and Humanities. 4 (2): 29–44.

Campus design interacts with its inhabitants and institution and between its inhabitants and institution. The architect and design actors are entangled with both inhabitants and institution as a third party. This triggers a making and a re-making process. The constant change in its use challenges the frozen entity perception of archiving the past, so its image has been rewritten within time. This dynamic condition should be considered in parallel with the term 'network' while campuses may be interpreted with the term "rhizome" from the outer scale of this study as well as with the term "network" between cases.

Modern campuses are also significant as an urban model. They correspond to the total complexity of modernism which cannot unfold without projections from the network. The Post World War II period is known for the immense social shifts after the war that directly resonates to urban models whose requirements are similar to emerging cities. Thus, the operational projections between architecture and modernism cannot be directed by the existing urban agendas. Campus in many scales can meet the agenda of modernism towards constructing modern society. Meanwhile, it forms its own network; the modern campus network characterized with the institutional circumstances, the main higher education function, and the projections of unique assemblage to architecture from urban scale, landscape, building and detail scale and even art. "The non-linear, non-hierarchical model of organization of assemblage brings together incommensurate objects of knowledge, and sometimes it overflows into altogether different material realities." (Zdebik, 2012) Since each case is relatively unique, it is not possible to list these cases in a hierarchy.

This study aims to realize the network of modern campuses and its interconnections towards the network of modern architecture. Therefore, mapping modern campuses is interpreted in multiple contexts and scales and considered both a research tool and an interface for the production of architectural information. The projections in cyclic relation between modern campus and modernism and their actants will compose the information ground the possible final map. The challenge of this study after

exploration of multiple mapping trials and mapping methods to understand the narrational integration of the continuously updated and expanded data.

1.4 Methods and Process of Study

The act of mapping as a research practice was initiated during the research process of "Campus Utopias" project. From the first trials, the need of methods and strategies to lead the research and the process of information towards visualization has been experienced. One of the critical questions was what should be the interface that put the collected data into a parallel reading ground for further knowledge production. Mapping selected inventory information of campus and the selection of the mapping ground have references from spreadsheet list and its categories. Thus, each trial becomes an operational layer for mapping and research. The purpose of using mapping is to go beyond the tracing of the spreadsheet order in visual manner. One of the challenges about mapping modern campuses is the list of campuses in the research are developing, and the data set has been continuously updated and evolved within the research processes. Therefore, the lack of the final data set marks each mapping trial as one of the possible interpretations to narrate the modern campus network. The available software solutions cannot meet the needs of the "Campus Utopias" project and its research environment.

In this thesis study, mapping trials are presented to unfold the research process and learning outcomes of each mapping trial that shaped the final mapping process with inherited knowhow. However, the final mapping trial of this thesis has bound with a specific data set which is curated in parallel with the approaches of the research project. The final mapping trial is composed of many different information layers to meet the complexity of modern campus network. Although software production or websites can be one of the approaches to order collected data as an archive, it is not the scope of this study. This study is limited to the framework of a selected set of architectural productions, five campus cases in the red list with the limited exploration of its actor network relationships and its representation.

The research network of this thesis study is explored in GraphCommons diagram.[16] This diagram initially aims to put a logic between these three terms: modern, modern campus and mapping. In this diagram related keywords, concepts and sources for both mapping and modern campus are introduced and linked. (Figure 1.1) In the figure, it is shown in low detail level, focusing on mapping term and its connections. Both textual and link information vary because of the ontological and actant positions and the interpretation for the study. A map and a diagram are two significant visualization tools. They are linked in this network since they are evaluated as complementary in terms of operational capacity.

While maps compose a mode of representation category akin to diagram, the link between a map and a diagram is introduced as 1, true and related. With respect to theoretical references, this 1 represents that diagram and mapping share common capabilities of performing as an abstract machine for its information network. Also, secondary links between a diagram and a map introduce abstraction. This link shows that one of them may be transformed into the other's abstracted image. When the connections increase, the node gains a hierarchy which is performed in GraphCommons medium as a growing density and centrality. The color code means that each node is set depending on its type or category. It can be a concept, mode of representation, function, representation quality, method, definition, source (bibliography), even notes and labels. Also, links have different meanings as 1, true; 0, false; > as embodies, method and abstraction again. The structure of this study's network is represented in Figure 1.2. The establishment of new types and links expand the research scale.

[16] Available at https://graphcommons.com/graphs/4ffa91e9-25fd-4fbe-9547-25d16233a297

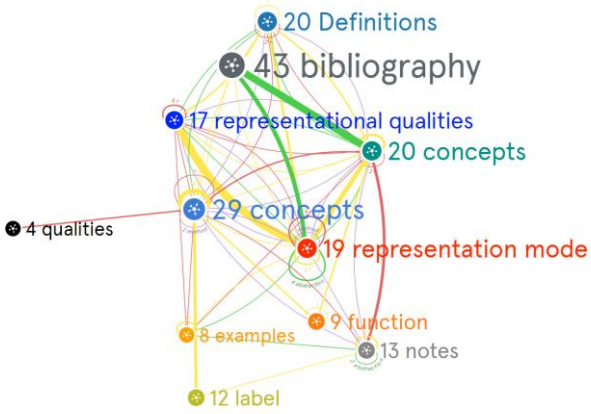

Figure 1.2. The structure map of the Mapping Modern Campuses study in GraphCommons Medium

The following diagram partially shows the mapping process of the research. Its primary interconnections from a detail scale with further references assist the structure of the thesis study. While these links compose the meaning of mapping especially for this study, also it sets the potential in methodology by filtering, neglecting, and distorting. In this regard, retrieving any kind of knowledge is bound to the dialogue between the map and its reader. How the reader is engaged with this interactive interface is a determinant of the reading. This network is revisited, reevaluated, and reconstructed again and again during the research, mapping trials and thesis writing stages in a cyclic manner. From figure 1.2 to 1.4 are glimpses from an early stage.

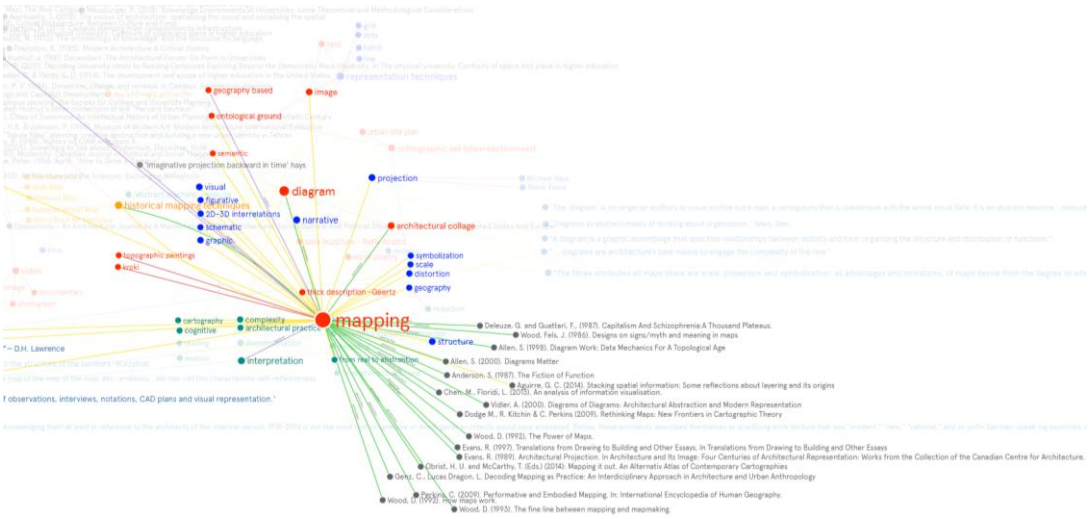

Figure 1.3. A close-up on 'mapping' node in the network map of the Mapping Modern Campuses study in GraphCommons Medium

1.5 Content Brief of Study

After the introduction, the thesis continues with the second chapter 'University Campuses in the Scope of Modern Architecture'. Considering Michael Hays' words modernism as a historical record and as a paradigm in continuation has such a thick[17] layer that complexifies the definition of any interrelations between modern architecture and modern society. This chapter sets theoretical grounds with leading references. Latour in his book *Science in Action* (1987) states that technology and society are continually coproduced in a process of the reciprocal tuning of facts, theories, machines, human actors, and social relations. Latour's approach is

[17] The definition is a reference to Geertz, C. (1973) "The Interpretation of Cultures" and can be further developed with two definitions "A thick description … does more than record what a person is doing. It goes beyond mere fact and surface appearances. It presents detail, context, emotion, and the webs of social relationships that join persons to one another." (Denzin, 1989, p. 83), and "Thick description is not simply a matter of amassing relevant detail. Rather to thickly describe social action is actually to begin to interpret it be recording the circumstances, meanings, intentions, strategies, motivations, and so on that characterize a particular episode. It is this interpretive characteristic of description rather than detail per se that makes it thick." (Schwandt, 2001, p. 255)

discussed by scholars as actor-network analysis is the tool for facing technological and social determinist perspectives' cyclic impacts. In the first chapter, the following part: 'The Index of Post-war University Campuses' introduces selected specifications. Before the definition of campus in a particular architectural frame, the evaluation of higher education institutions like universities and colleges set an urban scale. Likewise, from the general to the specific, this part introduces the content of mapping. Within the time frame and limitation in the architectural context, some of the modern campus cases are discussed further in detail to realize possible projections and visualization of projections.

In the following chapter, 'Mapping' is unfolded as a research tool and an outcome which is complementary in visual and archival level. How different map and mapping definitions and theoretical and practical approaches may support the study have also explored.

According to Corner, mapping is a fantastic cultural project that has significant potential as a practice. His description gives references leading to the mapping of modern campuses and dealing with their complex data set.

> "As a creative practice, mapping precipitates its most productive effects through a finding that is also a founding; its agency lies in neither reproduction nor imposition but rather in uncovering realities previously unseen or unimagined, even across seemingly exhausted grounds. Thus, mapping unfolds potential; it re-makes territory over and over again, each time with new and diverse consequences."[18]

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[18] Corner, J. (1999). The Agency of Mapping: Speculation, Critique and Invention. In Mappings (pp. 213–252). essay, Reaktion Books.

Corner's thoughts on mapping as practice open several positions of interpretation starting from the data accumulation. During the research phase of the project "Campus Utopias", several mapping trials are conducted within the Corner's vision. Each trial aims to uncover hidden interconnections or previously unnoticed agents in the modern campus network. Relatively, each trial leads the project and its documentational schemes. New strategies on the structure, new concepts, themes, and sub-lists of the project are studied. The general trials and their processes are discussed to show how to reach a final mapping for this study. How the representational and architectural aspects of the objects play a role in the mapping procedure without misleading the totality, stands one of the critical questions that has shaped the study.

Until now, mapping has been discussed and elaborated on its operational sense. On the other hand, mapping has an interface also define the representational and architectural dialogue. Therefore, for this study, there is a need for guidance in which the representational and architectural references are also bounded with its time, modernism. Since modernism in architecture embodies its own 'image'. This modern image as mode of representation directly sets a dialogue within the network of modernism. Blueprint drawings, axonometric set-ups and more machine-like diagrams can be interpreted as the 'zeitgeist' of the time.

This guidance was found in a campus article in one of the foremost architectural magazines of the time. Architectural publications are used to construct the image of modern architecture. *The New Campus* article is published in 1966 in The Architectural Forum Magazine. His author is Oscar Newman who is associate professor of architecture in Washington University. Newman in *The New Campus* article shows an overview of campus architecture through five university campus cases starting from Scarborough University. Newman's interpretations within limited shows that campus networks can be constructed in different scales.

Newman's interpretation starts from selection of five cases. Then, the second operation is setting criteria to read five campus cases in parallel ground. These

criteria are studied to visualize the author's reading on the case as well as to express the design idea behind it. Thus, the visualization operation has elaborated with the diagrammatical mapping of each case. The integration of textual and visual information reconstructs a mapping study which provides a comparative ground for cases.

This article is a major source for this study to understand the campus architecture in terms of visual based mapping trial. The twenty-five-page document includes photographs, drawings, diagrams, and texts which introduce the comparative aspects of the campuses. Scarborough University is the base point of this comparison. In the article, Scarborough University is unfolded as the first and the most detailed case. Among twenty-five pages, only ten pages are spared for comparison of cases which indicates that this article's main concern is to understand Scarborough and its achievements as an architectural project. Considering the detail and information weight for Scarborough University shows that Newman wanted to use Scarborough as a tool to give the definition to the "new campus" and underline that it is the new urban model for planning. Other cases are elaborated considering the programmatic aspects and spatial characteristics of Scarborough University. Thus, selecting a base case is a critical operation to understand the campus design and the scope of the architectural knowledge network that the author wanted to construct. Newman provides a parallel reading, in which unique assemblages are flatten.[19]

1.6 Flat Ontology

Here, the term 'flat' is used with respect to 'flat ontology' concept. Levy Bryant formulates flat ontology with 'four theses' in his book *The Democracy of Objects*.

[19] Levi R. Bryant, The Democracy of Objects, Ann Arbor, Open Humanities Press, 2010, pp. 245-6.

In particular, his definition of the fourth thesis is embodied in this thesis objects, modern campuses. He argues:

> "[F]ourth, flat ontology argues that all entities are on equal ontological footing and that no entity, whether artificial or natural, symbolic, or physical, possesses greater ontological dignity than other objects. While indeed some objects might influence the collectives to which they belong to a greater extent than others, it doesn't follow from this that these objects are more real than others. Existence, or being, is a binary such that something either is or is not."

While this definition unfolds the equality of objects which means to put hierarchical order is not operational, it also unfolds connections that influence the power of objects that set actor-network relations and become operational for knowledge production. Likewise, Latour in his book *An Inquiry into Modes of Existence: An Anthropology of the Moderns* introduces ontological pluralism.[20] He claims "...we may benefit from an ontological pluralism that will allow us to populate the cosmos in a somewhat richer way, and thus allow us to begin to compare worlds, to weigh them, on a more equitable basis..."

So, what is discussed so far about Mapping Modern Campuses with challenges as research projects, this article shows parallel concerns. Imbalance in information detail between campus cases also forms a hierarchy which inevitably shapes the mapping ground. The second issue is about the object of the study which is the 'campus'. In this regard, a map cannot be thought of apart from actor network relations and its textual links and set of representations.

In the fourth chapter, the final mapping trial has been elaborated through actor network relationships and architectural visuals and their operational potentials to link

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[20] Latour B. (2013) An Inquiry into Modes of Existence: An Antrhopology of the Moderns. trans. by Catherine Porter. Cambridge: Harvard University Press. p.21

the text based network with the architectural information ground; photographs and drawings with their diagrammatical functions. Learning outcomes from the mapping trials in the Campus Utopias project have been discussed so far in chapter two and three within the elaboration of theoretical frames. The developed representational tools: considering the visuals as their diagrammatic capacity is operational for the embodiment of the concepts that set a transitive ground.

The main perspective for this chapter is, calling Corner's words, "[M]appings construct 'planes of consistency' that present analytical information while also allowing for suggestive readings/projections." This 'planes of consistency'[21] is set firstly for the definition of a modern campus. Middle East Technical University (ODTÜ) Campus is chosen for its representational qualities[22]. It represents Turkish modernism[23] with socio-political agenda after the Second World War. Further details about the importance of the campus as an architectural entity and historical institution are discussed throughout the chapter. Mapping the METU Campus diagram to understand the agencies of the architectural elements in the design stages becomes a milestone for this study. It is first studied as a part of the Arch 505 course by Ayşen Savaş as a part of the "Campus Utopias" project focusing on the METU Campus in a continuation of Getty Keeping It Modern project, later transformed into modern campus definition reading for this study.

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[21] Deleuze and Guattari refer to 'planes of consistency' as one of the important principles regarding mapping as a rhizomatic (burrowing and extending) activity. Deleuze, G. and Guattari, F. (1987) A Thousand Plateaus: Capitalism and Schizophrenia, University of Minnesota Press, Minneapolis, MN.

[22] METU Campus is defined as "an ideal and total university environment" Sargın, G.A., and Savaş, A. (2013). 'A University is a society': an environmental history of the METU 'campus', The Journal of Architecture, 18:1, pp. 79-106, DOI:10.1080/13602365.2012.751806
For further discussion, please refer to S. Muthesius, The Post-War University: Utopianist Campus and College, Paul Mellon Center BA (Yale, Yale University Press, 2001)

[23] Turkish modernism was generally associated with social utopias. In this context, the METU project has been a product of Turkey's desire for social, and ideological modernization. The METU Campus is one of the second-wave modernization projects in Turkey in the half of the 1950s.

1.7 Diagram

S.Allen (1988) argues in "*Diagram Matters",* Diagram itself is a description of potential relationships among elements and it triggers the outer world expanding the definition of its world.[24] In this chapter, a reverse operation is applied to unfold an architectural diagram. This operation opens an area for interpretation to discuss how the diagram embodies the design process of METU Campus. The layers that emerged as a result of the operation can be read as a unique assemblage of the design decisions of the architects, the competition requirements, regional, physical, and architectural contexts, and their architectural projections. This layers are architectural agents that can set network relations to other actors in the modern architecture. The term 'layer' is labeled as one of the four mapping practices: 'drift', 'layering', 'game-board', and 'rhizome' by J. Corner. 'Layering', here, "is the superimposition of various independent layers one upon the other to produce a heterogeneous and 'thickened' surface. "Çinici's diagram has a parallel complexity as an early work. The research conducted along with the deconstruction process finally reveals architectural projections with modern architecture references in this network.

As an interpretation of the architectural documentation, unfolding those layers is a "structuring of new and open-ended series of relationships" which is described as mapping by Corner in *The Agency of Mapping: Speculation, Critique, and Invention*. In this case, the diagram, and the mapping procedure of it as a diagram operate as an "abstract machine".

The METU Campus diagram is chosen firstly for its representational potential. Since the operations towards diagramming and mappings are really bounded with the source of visualization. The potential is linked to the availability of representational information like master plan or diagram drawn by its architects in the design phase.

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[24] Allen, S. (2000). Diagrams Matter. Assemblage, (41), 8. doi: 10.2307/3171268

These architects' drawings have representational states interconnected with the context and architecture. Besides their representational potentials, cases are evaluated as a part of the campus architecture narrative. Thus, the information based operational mapping on cases is critical as to figure out an understanding towards the bulk list and the sub-lists. Their data compositions have considered in their three ecologies [25] in the network.

After the deconstruction of the METU Campus with its design layers. The embodied knowledge of the layers in the architectural network becomes a tool for reading projections for other cases. The following stage is to read four cases in the red list to reveal their actor network relations with the design elements and strategies. For this operation the main source is considered as the Getty reports of the cases with the archival visual data, master plans, aerial views, and partial original diagrams provide visual guidelines. To understand the urban model with the reading of the campus cases is "an open and inclusive process of disclosure and enablement." (J.Corner).

This reading practice aims to explore continuity in the flow of modern architecture in the network of modernism not just as copies, but more as creative derivatives in their unique assemblages and ecologies as a grand narrative of this study towards a frame of mapping.

[25] Guattari Félix. (2014). The three ecologies. Bloomsbury Academic. Guattari's ecology definition unfolds as a study of complex phenomena, including environment, human subjectivity, and social relations within the interconnectivity.

CHAPTER 2

UNIVERSITY CAMPUSES IN THE SCOPE OF MODERN ARCHITECTURE

> "Campus as city, there are the visible similarities to ideal urban forms which our visionary city builders have spotted. Campuses show some likeness to cities in that they are complex collections of activities, highly concentrated and serving a large population." (Newman, 1966)

Dober states that in 1951 enrollments for higher education institutions had doubled and continued to rise afterwards. Based on the high number of students, present institutions like colleges and universities were unable to provide the expected services. The physical facilities become inadequate besides changing academic programs with developing technologies requires new spaces like laboratories. Administrative bodies to governments acted towards a timely response. For the time, campus architecture reveals itself as an important design discussion with its scale and the integrity of form and program in that scale. Architecture of campus goes beyond of compensation of double enrollments but triggers a formation of social life and new urban dynamics.[26] As stated by Newman "Campus form follows a faith in urbanity! Small wonder that campus design has opened a welcome new horizon." Therefore, it is inevitable that the agenda of campus architecture of the time is tangled with the spirit of the time and its followings 'modern architecture'[27]. During

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[26] Dober, R. P. (1996). Campus planning. Society for College and University Planning.

[27] Siegfried Giedion who is a pioneer in modern architecture writing (1948) states that "The meaning of history arises in the uncovering of the relationships." Towards revealing projections between modern architecture and modern society, complementary key concepts of the period should be introduced. These keywords can vary from modernity (moderne), avant-garde, constructivism, futurism, and International Style, particularly between the

"the sixties" there were radical changes in political life, the history of philosophy, the world economy, and general cultural production that the date connotes.[28] Its relationship with architecture are discussed by many scholars.

As Tournikiotis explains

> "The causes of emergence of modern architecture were neither technical nor artistic; rather, they were associated with the profound changes brought about by the Industrial Revolution, with the overall transition of society to a new mode of production involving new social, economic, political, and cultural relations." [29]

Hilde Heynen in *Architecture and Modernity* introduces the modern movement as embodiment of a concept of architecture which constitutes legitimate answers to the experienced traditional ruptures by society. [30] Thus, the process of modernization tangled with architecture has realized in reference "a condition of living imposed upon individuals by socioeconomic process of modernization."

Frampton explains the position of modern architecture in urban environments.

> "One of the paradoxical consequences of this population shift is that today we are largely unable to project urban form with any degree of confidence, neither as a *tabula rasa* operation nor as a piecemeal aggregation." [31]

To construct a project that reflects the ideal society of the day can be achieved to build from scratch with the tradition break in particularly architectural sense. University campus projects, as urban models that are linked to an institution agenda,

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1950s and 1970s in the sixties… Heynen explains the term moderne in which his book refers to H. U. Gumbrecht, "Modern, Modernität, Moderne,", modernity, modern, and modernism have assumed that the variety of meanings in English is rather similar.

[28] Hays, K. (1998). Architecture theory since 1968.

[29] Tournikiotis: 1999, p.93

[30] Heynen, H. (1999). Architecture and Modernity, Cambridge, Massachusetts: MIT Press, 1999 p.26

[31] Frampton, K. (1999). Megaform as urban landscape: 1999 Raoul Wallenberg lecture.

are significant. Since, in the context of modern architecture, the pioneering architects materialized the image of architecture in specified urban patch not only with the buildings but also with the ideologies, ideologies of society as well as ideologies of institutions. Also, production spaces like factories and their campuses are projecting similar complexity tangled with modern society. In this regard, higher education institutions are one of the notable institutions that directly correspond to the paradigm shifts of the time.

Furthermore, university campuses encapsulate complexity more than the "dwelling" in this period. The issue of dwelling has been interpreted with new urban models, mass housing, community housing, and social housing. The inspirational aspect of campus, it is found more potential to form modern society as an urban model in modern architecture. In this regard, the architectural agenda in the Post-war period, and particularly dwelling issues should be revealed.

Architectural Agenda in Post-war Period

After World War II, the international architectural context of the time could be defined by the general need for re-urbanization. [32] The re-urbanization agenda was discussed by many scholars from architecture to social and economic contexts ranged from the dwelling needs to industrial recovery. The realization of the need as a reconstruction cannot be evaluated apart from the economical capacities. In the World Economic and Social Survey by United Nations in 2017, the period from the end of the Second World War in 1945 to the early 1970s is identified as the "Golden Age of Capitalism". The dialectic between the construction and economy is presented as:

> "Several Governments ran budget deficits in an effort to rebuild both housing and industry and faced severe balance-of-payments complications in the

[32] Diefendorf, J. M. (1989). Urban Reconstruction in Europe after World War II. Urban Studies, 26(1), 128–143. https://doi.org/10.1080/00420988920080101

> process. Still, according to *World Economic Survey 1995*, the recovery of post-war years was "truly impressive".

As such, the period is unfolded as a period of economic prosperity extending with the achievement of a high and sustained level of economic growth and high levels of labor growth particularly in Western Europe and East Asia.

Although this re-urbanization agenda is not limited to the European countries, the statistics in the archival documents help to draw a clear picture of the need. One of the core development agendas of the re-urbanization is housing for modern society as a living right, beyond a social need. P.Wendt (1962) defines the situation of western Europe after World War II, as follows

> "Western Europe faced critical housing shortages, brought about by demolition, obsolescence, cessation of the building during war years, as well as high marriage rates and rapid expansion of urban population and incomes. Consequently, the elimination of housing shortage becomes a major social objective for most western European governments."

Duanfang (2011) states that modern architecture originating in interwar Europe has defined "something far-reaching variability which has been explored by changing canonical narratives".[33] The functional agenda of cities are not limited to housing, also recreational, educational spaces, and production areas should be elaborated in integration. The main concern of the time is the reconstruction of cities in strong functional agenda for the time and the future.[34] Cities and neighborhoods are

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[33] Modernism reflects a global term after beginning to grow, advancing with how modernist architecture was adopted, modified, interpreted, and contested in different parts of the world with their unique contextual positions. In that sense, a critical derivation of modern architecture has been developed. Lu argues that even modern architecture shares intersections within concepts like globalism, developmentalism, nationalism, and postcolonialism. The so-called third world shows a different tendency towards realization or architecture from those in developed societies during the same historical period.

[34] Gold, J. R. (1997), The Experience of Modernism: Modern Architects and The Future City, 1928-53, London, E & FN Spon.

elaborated and intervened by architects and social-political bodies to generate wealth. The production of wealth leads the frame of modern society, and the final urban realm would have the power to sustain modern living for society. Also, this drive takes over a more comprehensive region, global in a way.

In that sense, urban planning is one of the controversial topics for CIAM congress. In the CIAM 4 meeting, Van Eesteren argued that the "functional elements" of a city varies from large factories, ports, collective recreation spaces and city should be organized in relation of these functional elements and housing together. Also, he underlined the raising importance of vehicle roads for cities and their futures. "Four functions of the city" is finalized and published firstly at CIAM 4 as dwelling, work, transportation, and recreation. [35] This functional city idea inherits some aspects from the earlier practices. A comparison of the program of a campus and a city shows that four functions of city can be also valid for a university campus or even overarches it.[36]

New urban models with faster development potential were considered. The economic and political sphere of a region, mass housing projects with recreational support in their program become the main tool of production. The author of *Mass Housing: Modern Architecture and State Power book*, Miles Glendinning (2021) states that "…Vast programs of mass housing – high-rise, low-rise, state-funded, and built-in the modernist style – became a truly global phenomenon…" According to the city's culture, urban fabric, economy, and social dynamics, the architectural model of modern housing changes. In general, urban projects tried to build in advance as a new way of modern living and necessary development of the time. It

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[35] Gold, John R. "Creating the Charter of Athens: CIAM and the Functional City, 1933-43." *The Town Planning Review* 69, no. 3 (1998): 225–47. http://www.jstor.org/stable/40113797.

[36] The CIAM idea of the Functional City was derived from Cornelis van Eesteren's Amsterdam planning. In 1933 the CIAM 4 meeting set the basis for this model. Mumford, Eric. (2019). CIAM and Its Outcomes. Urban Planning. 4. 291. 10.17645/up.v4i3.2383.

can be said that the position of dwelling in modernity is detached from culture since the main concern of the mass housing project of the time period bears the burden of responding to changing living conditions and cosmopolitan lifestyles that differ among individuals. As Heynen stated the dialectic between a mass housing and society may not be a reflection of the urban realities or ideals. However, urbanistic practices in modernity presents its thick impact with industrialization, political upheavals by transforming far more than just an intellectual concept.

> "In the urban environment, in changing living conditions, and in everyday reality, the break with the established values and certainties of the tradition could be both seen and felt." (Heynen p.11)

2.1 The Index of Post-War University Campuses

The index of post-war university campuses explores fundamental information pieces needed also to understand how the definition of a 'modern campus' evolved. Campus, university, and college are terms that have been used in time, but further evolved regarding institutional vision, higher education programmatic scope, and university society aspects besides architectural characteristics. 'There are major resources needed for a comprehensive historical overview. Each source sets its own campus definition and architectural correspondences for its time and provides actants and interconnections from its own network.

One of the comprehensive sources is *Campus Planning* (1996) written by Richard P. Dober. It is first printed in 1963 by Dober who is a charter member of SCUP (The Society for College and University Planning). Dober (1928-2014) is a significant actor in campus design since he was a planning and design advisor to more than 450 colleges, universities, and cultural institutions. His nine books and numerous articles on planning and design are significant sources.

In *Campus Architecture: Building in the Groves of Academe* in 1996, he states that a great campus must "ennoble the past, enhance the present, and provide for the

future balancing continuity and change." *Campus Design*; *Campus Landscape; function, form, feature*; *The new campus in Britain; ideas of consequence for the United States*, and *Campus Heritage* gives deep perspective about campus and its planning.

Also, he is the founder of the Society for College and University Planning which shows a great care on campus design. Alex Krieger who is a former chair of Urban Planning and Design Department at the Harvard University Graduate School of Design states that

> "It is not often when someone, virtually single-handedly, reinvents a particular discipline, as Richard Dober certainly did with modern campus planning. He did so by appreciating that university and college campuses were social contexts as much as academic and physical contexts, maintaining this key insight being critical for successful planning and programming for their growth."

Dober studies the functional goals of campuses and contextual situations. This is an understanding that presents campus as an assemblage that is projected from its context. There are three major sections in *Campus Planning*.; 1-Prospectus", 2- "The Campus and Its Parts" (such as instructional facilities, housing, and parking and circulation), and 3- "Campus Plans," (such as expanding the campus, building a new campus, and renovating).

As a summary, the first section shows the importance of historical contingencies and reveals the evolution of campus planning as a design form. The second section focuses on the parts of campuses generally on building scale. In building scale, the dialogue between function and aesthetical aspects has also been discussed. It is elaborated towards an integration in form. This part concentrates on architectural entity more as plastic or machine aesthetic rather than the social constitution. Programming and designing the various parts have importance considering that they are the new urban models. The last section is more about the process of the design, construction phase, and later expansion strategies. This section includes visuals

ranging from many sketches, plans, and views. These materials locate the historical information on an architectural ground with the detailed information pieces that embed both architectural and contextual aspects.

In particular, the New Campuses part corresponds to this study focus and provides briefs about ten campuses with site plans and built knowledge. These campuses are San Mateo Junior College (1961), The Church College of Hawaii (1955), Charlotte College (1961), Concordia Senior College (1957), The University of Illinois at Congress Circle (1962), Pine Manor Junior College (1961), Northern Baptist Technological Seminari (1961), Sonoma State College (1962), University of South Florida (1958). Throughout the elaboration of these ten campuses, there are continuous considerations like settlement integration with landscape and city, a grand composition with circulation and/ or spine, programmatic complexity dissolve with an urban grid or zoning.

Figure 2.1 is placed to introduce the diversity of selected campus cases are in variety in terms of urban scale, urban articulation, building form, and building composition. The complexity of campus as an architectural, an urban, and a social case reveals itself just from an aerial view.

Figure 2.1. Aerial views of three campuses from Dober's examples (1. San Mateo Junior College (1961) aerial view focusing on Skyline College retrieved from archives of the PHLIP project, College of San Mateo Library. 2. Aerial View of Concordia Senior College Campus from the Southeast- by Eero Saarinen 1961: retrieved from Concordia Theological Seminary digital. 3. Aerial View of Concordia

Senior College Campus from the Southeast- by Eero Saarinen 1961: retrieved from Concordia Theological Seminary digital)

According to the SCUP, campus can be more.

> "More than laboratories that accommodate research. More than classrooms that hold students. More than buildings that store books. The campus can be nurturing. It can be inviting. It can be stimulating. It can be the physical manifestation of an institution's mission, a reminder of the promise and potential waiting to be unleashed."

With respect to the discussion above, the second source is *In Campus: An American Planning Tradition* (1995). This book is another comprehensive source written by Turner. In the introduction part of his book, he states that the power of modern architecture that creates such a complex and working urban model lies in its core concepts like a rejection of historical tradition, embodiment of functionalism, and flexibility. Different campus examples reveal that the implementation of these core concepts varies. In this regard, it seems there is no such thing as absolute modern regarding each case's uniqueness. The way he explores each case shows that each project as a campus project have different interpretation level embodied by their architects. Turner starts with the Illinois Institute of Technology in Chicago by Mies van der Rohe by focusing on its axial and symmetrical layout in the grid as a continuous part of the urban fabric. Turner comments that it seems classical more than modern, but individual buildings' identity reflects the purity of International Style. Thus, Mies van der Rohe's original site plan goes back to 1938's which can be evaluated as an early example. Apart from the ongoing dominant architectural tendency of the time, the architect's intention as an actor should be taken into consideration. Andrew Higgott in Mediating Modernism states that "Architecture is never in reality about the functional never simple the fulfillment of a brief: and functional justification is a pretext for the architects' more complex intentions which relate to the cultural context in which he or she participates." (p.5)

Another source is *University Architecture* by Brian Edwards (2000). His books are composed of three main parts: the campus, buildings, and conclusions. The part one sets an urban approach with an academic institutional program. In the first chapter, it sets the challenge of design of a university starting from its self-governing, mainly publicly funded institutional structure which is engaged with community of academics and students. The first part also focuses on master plan and development frameworks, picturesque enclosure versus rational planning, particularly taking British Campus into consideration. His attention raises what he called 'practical problems' calling circulation, defining the center, skyline, defining the edge, establishing the footprint of key buildings, computing on campus, landscape, environmentalism on the campus, the problem of the inner-city campus, and funding and implementation. The approach of Edwards can be understandable as such he sees function and form as nested situations and tries to figure them out in totality.

The first part ends with the consideration of sustainable social life, and the ideology of the campus in terms of developing modern society. He presents Birmingham University as a case study of crime prevention. The significant detail is that seeing the campus as a political space. He argues that the campus is regarded as a center of intellectual life. After that, he underlines its characteristics as a space for political protest. According to him, the politics of under on campus must be considered at the masterplan stage. "Students need to feel free to engage in political or social action, yet the destructive forces of action have to be controlled." (p.55)[37]

All these titles show that Edwards also thinks on the life of campus which cannot be thought apart from the master plan and following built form and urban dynamics. Part two of the book is more related with the parts and individual functions, libraries, laboratories, special functions, art, design and music departments, general teaching spaces within flexibility, housing. The third part which is the conclusion and shows his perception; "Why does the university campus matter?" In this section, he

[37] Edwards, B. (2000). *University Architecture*. Spon Press. p.55

explores design ideals, innovative technologies and more the relationship with society as bridging the community.

Edwards underlined that the normal of a university is tangled with the well-defined physical area which gives a sense of identity and social focus (p.50)[38]. Moreover, he evaluates the successful campus as a masterplan that creates a sense of place and accommodates change for the future. The critical point is that he opens the discussion the dialogue between academic image and built form. According to his perspective, which this study also relies on, the dialogue between academia as an institution and a built form is a projection of its ideals have engaged in a discourse with time and space in other words with history and geography.

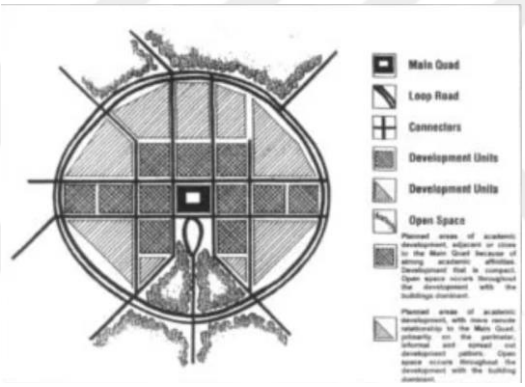


Figure 2.2. Planning principles, Stanford University, Palo Alto, USA. Retrieved from the book University Architecture by Brian Edwards

In figure 2.2 shows Stanford University diagram, it is remarkable that the campus planning tools can be recognized in hierarchy of settlement. Ring road, core settlement, grid, development areas, and surrounding landscape can be read within the complete composition. It is a quite leading example and that represents the

[38] Op. cit. Edwards, B. (2000)

fundamentals of campus planning which will be discussed comprehensively how these elements are the basis of a campus in following chapters.

Furthermore, his words: “History shapes cultural awareness and this, with many nations, is an important factor in determining the layout and detailed planning of universities,” is remarkable since it sets the complexity of the contextual information.

As an example of this idea, he presents the Qatar University designed by Kamal El Kafeawi in 1973 as a reflection of “modernity in the form of rectangular buildings with elements of Islamic culture”. This university is an important example since its campus won the Aga Khan Award for Architecture in 1987.

Figure 2.3. The Aerial view of Qatar University by Kamal El Kafeawi, Doha, Qatar completed in 1985 retrieved from the document for Aga Khan Award for Architecture in archnet.org

What is quite remarkable about his book, he gives focus also outside of the European or United States campuses. He states that the Medical School of the King Faisal University in Dammam Saudi Arabia by Andrautt Parat with Beeah Architects is an important example that preservers its cultural identity in the global marketplace of higher education.

Figure 2.4. The Aerial view of Qatar University by Kamal El Kafeawi, Doha, Qatar completed in 1985 retrieved from the document for Aga Khan Award for Architecture in archnet.org.

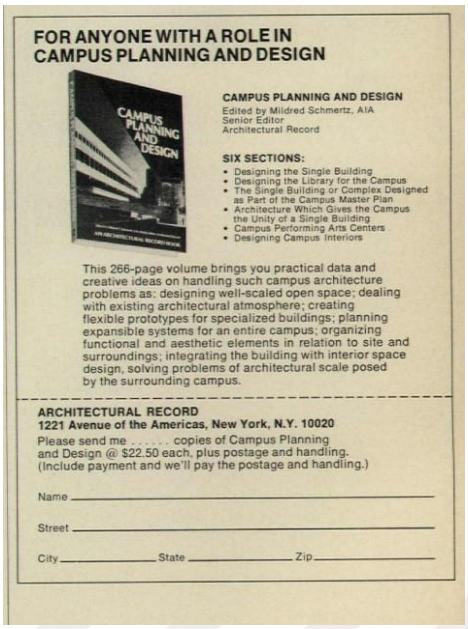
In figure 2.4 built form is unfolding as a mat form with high density for its campus urban environment which is a critical decision considering the region's climate.

Furthermore, he underlines the different layouts of campuses that are explored in that time in terms of achieving the efficient utilization of land and infrastructural services. These patterns are also important to give a unique character to the design. In this regard, the given examples have varied from the University of York (1960-4) by Robert Matthew, Johnson, Marshall and Partners, Simon Fraser University, British Columbia, by Erickson and Massey 1968-1972. He divides the masterplan types into nine and identifies their *place making* characteristics that are either building dominated or landscape dominated. However, either way place making follows collegiate, linear, grid, modular, molecular, radial and ad hoc layouts.

Figure 2.5. Simon Fraser University aerial view as to show megastructure character on Burnaby Mountain from SFU archive.

2.1.1 Magazine's Collective Campus Definition

Articles in Architectural Magazines at the time should be introduced as one of the main sources flourished in its contemporary production. Many articles are published and some advertisements about new campus projects and books are promoted. Figure 2.6 presents an advertisement of a book in the article. This advertisement reflects the current interests of architects at that time. For example, Campus Planning and Design book has been considered as one of the fundamental books to guide architects in the agenda of campus architecture. The content of the book examines the major elements and concepts of campus planning. In this regard, the topics have variety from single building to complex, relatively concepts have been differentiated from functional divisions to contextuality, from stylistic approaches to environmental concerns.



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Edited by Mildred Schmertz, AIA
Senior Editor
Architectural Record

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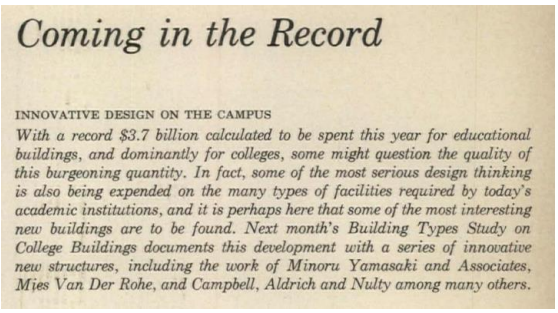
Figure 2.6. An advertisement and news page in Architectural Record Magazine in 1961 which is repeatedly published in issues. (US Modernist online archives)

The attention on campus design in the period can be traced also from editorial manifestation held on with respect to the publisher's note in Architectural Forum Magazine in 1966. L.M.W., who is the publisher of Architectural Forum Magazine explains the consistent attention to campus planning in the content of the magazine is not a coincidence. The agenda on building colleges and universities has an increasingly large area in the architectural activity of the time. In 1964 April issue of Architectural Record, the section of Current Trends in Construction focus on the Dodge Company and its financial brief. The article titled "1964 Construction Outlook at Midyear" by George A. Christie, a senior economist of Dodge Company states that Dodge construction contract value provides the direct link between the current demand for building. He states that educational building is a current trend in construction since contracts for school construction reach likely $3.5 million and will gain at least %5 more in following years. He argues that this is an outcome of the urgent need for college and university and the new Higher Educational Faculties Act supports.

Figure 2.7. A couple of selected articles about campus planning between years 1964-1966 in order to show variety in articles and their focuses (US Modernist online archives)

The publisher L.M.W. states that urban design is the current focus and the major project about urban is campus project. According to him, comprehensive content about campuses should be placed in the issue. (Figure 2.2) Even though the difference between cities and campuses is highlighted, the scale of the places of campuses reflects that the design stages of campuses meet the level of complexity that cities have.

In the 1996,04 issue "How to Grow a Campus" article elaborates some examples: Tougaloo College in Mississippi (page 56), and Washington University campus in St. Louis (page 62). Because these two projects are introduced as the most significant urban design concepts in academia. From the publisher's perspective, the campus examples declare a high capability "to build an urban environment of order and amenity". "The development of such machinery is, currently, the subject of a growing amount of thought and research among all those concerned with building cities, government, industry, the design and planning professions, the social and behavioral." As such these significances are reasoned by showing campuses reflect what cities would be. Editors final words reveal how urban architecture is tangled with the assemblage and its actors' capacity. The following issue has a dense article named "The New Campus". Scarborough campus has analyzed with four others, and states that "the New Campus has come to occupy the dominant position in current architecture." From many letters, and interviews to short focus paragraphs, 'campus' becomes an urban concept that is even mentioned for comparison and similarity for architecture on city scale. For example, a gate of Campus Porte Cochere of Colgrate University by Paul Rudolph is elaborated to understand the design decisions and evaluations of the campus for a gate design.



Coming in the Record

INNOVATIVE DESIGN ON THE CAMPUS

With a record $3.7 billion calculated to be spent this year for educational buildings, and dominantly for colleges, some might question the quality of this burgeoning quantity. In fact, some of the most serious design thinking is also being expended on the many types of facilities required by today's academic institutions, and it is perhaps here that some of the most interesting new buildings are to be found. Next month's Building Types Study on College Buildings documents this development with a series of innovative new structures, including the work of Minoru Yamasaki and Associates, Mies Van Der Rohe, and Campbell, Aldrich and Nulty among many others.

Figure 2.8. Architectural Record Magazine introduction section p.5 in September 1965 issue (US Modernist online archives)

In figure 2.8, the introduction section of Architectural Record Magazine of 1965 September issue gives place the coming articles news with the topic 'innovative design on the campus. The brief reveals that the spent budget $3.7 million calculated amount for educational buildings which shows a strong position in the construction agenda. Two phrases have a significant importance which mentioned as 'the most serious design thinking' and 'some of the most interesting buildings'. These two highlight that campus architecture becomes a frontier in its time contemporary architecture.

2.1.2 Architectural Premises of Campuses

As highlighted in the "Campus Utopias" course by A. Savaş, general themes that are discussed for campus planning are in parallel with the city production agenda. The need for modern education and its socially and architecturally projected spaces altered the discussions from scale to form. For example, Groucher College's competition brief provides insight into thematical issues. This brief is dated back to 1938 and emphasizes the following approaches "should reflect these progressive principles in education" as well as "preserve the natural loveliness of the landscape",

and “the emphasis should be upon the informal rather than institutional or monumental”. [39]

This brief can be summarized as the main concern is gathered on three points. Program; formal function, landscape / land, social life/ informal recreational or complementary functions. These points operate on projections on design both on urban and building scale and set precautions to adapt in the long term. Setting the need for flexibility shows that the rapid change notion of time will be a general tendency for the future.

One of the three points is landscape. Landscape has been introduced and approached differently in different projects. For Groucher College cases, it seems it is considered as a deteached element that should be dealt with for balancing the built.

On the other hand, even if it is counted as separate two points, it seems that program should be considered in a dialogue with formal and informal aspects together. The usage of the term ‘informal’ can be interpreted as to underline that the shift from the image of archaic educational spaces to space for a society with the participation of the any cultural, social and economic background. This idea could be the projection of the socio-political drive of the time to architecture. Focusing on designing informal organizations gives clues about this urban system functions beyond its educational program.

Joseph Hudnut, the dean of Colombia University School of Architecture and the first dean of Harvard Graduate School of Design, in his annual dean report (1935) presents his approach to architectural education on the basis of urban planning and society relationship.[40] He gives place on the formation of universities in different architectural publications as a concrete projection of his ideas. Hudnut emphasizes

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[39] Report to the Board of Trustees on the Campus Plan for METU, December, 1959, approved by the Trustees in January, 1960, METU Archive.
[40] Hudnut, J. (1947, December). The Architectural Forum. On Form in Universities, 90–92.

like a city's nature of a growing organism, campuses are never complete. Therefore, he rejects the stability and permanence that traditional colleges embodied would not be an architectural choice of campuses of the day. Hudnut states that his architectural education approach is to teach to students to view the time as a "continuous flow" and providing an understanding of "the cities and places as "*not static things*" but are *things in process*".[41]

This approach can be evaluated as a trigger of a shift from the tendency of designing a 'grand composition idea' of Hudnut [42] to design of more a part of a whole, or in other words, module organizations. The part of a whole idea leads to a design approach that individual buildings can have their characteristics and give flexibility for large buildings like dormitories, and lecture halls that meet the higher density without forcing themselves to blend with the existing fabric. The perception of the architectural entity as an individual art object pursues an urban theme which is contrast rather than conformity.

On the other hand, Turner perceives this approach "architectural laboratory"[43]. The power of this idea lays in designing more freely in the grand composition and play the integration with surroundings beside the coherence between structures. This blurring boundary of coherence/contrast also meets diversity in the educational program and diversity of users from students to staff. Turner focuses on this aspect by highlighting Black Mountain College in North Carolina dated 1937s with its

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[41] Pearlman, Jill. "Joseph Hudnut's Other Modernism at the 'Harvard Bauhaus.'" Journal of the Society of Archite991314ctural Historians 56, no. 4 (1997): 452–77. https://doi.org/10.2307/. And Hudnut, J. "On Teaching the History of Architecture" p.6

[42]Kapp, P. H. (2018, March 1). The university campus in the United States-as a designed work to produce knowledge; and as an artefact of cultural heritage - built heritage. SpringerOpen. p.42 Retrieved January 12, 2023, from https://built-heritage.springeropen.com/articles/10.1186/BF03545702

[43]Turner, P. V. (1984). Dynamism, change, and renewal. In Campus: An American planning tradition 249–305. essay, Architectural History Foundation u.a. The MIT Press

informal education frame and communal social values. He added that the diversity approach become very clear mostly in the 1950s and 60s. Hudnut's ideas and approaches can be further investigated in CIAM congress releases with parallel to urban discussions. This situation shows that campus has a strong link with the city production in architectural sense, even the scale is not comparable in most cases.

From the actors' perspectives, the architect's position in campus cases may unfold with an example. Paul Rudolph and his campus planning for Umass Darthmount can be evaluated in this sense. The campus design started in 1963 and it was called Southeastern Massachusetts Technological Institute or SMTI. In the report UmassD the Original Intent Behind the Concrete Jungle from 2012 history seminar, Paul Rudolph's actor position is unfolded with the following sentences. [44]

> "An avid fan and practitioner of the Beaux-Arts, as well as a student of Walter Gropius's Bauhaus drafting methods, Rudolph made both beautiful illustrations and complex plans of buildings and spaces that he hoped he could realize as material structures." (p.2)

This description of Paul Rudolph shows what he brings to this project as an architect from his architectural network. His style and approach try to find a togetherness between society and architecture. He designed to lift classrooms and offices into the air to provide a pedestrian circulation ground. Further, he planned to use a ring road to enclose this layout. The scheme he thought the representation of 'educational utopia' responds to spatial organizations like; "The school's various interiors is semi-labyrinthine grand open spaces that which include numerous bridge-like tiers connect the floors to common areas. With the plethora of crossing paths into larger

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[44] This catalog has been produced by the students in Anna Dempsey's (Associate Professor of Art History) and Allison Cywin's (Director of the Visual Resources Center) Art History Seminar in the Spring of 2012. Dartmouth, U. of M. (2012). Behind the Concrete Jungle Report. College of Visual & Performing Arts | UMass Dartmouth. Retrieved January 12, 2023, from https://www.umassd.edu/cvpa/departments/art-history/senior-seminar-exhibition/behind-the-concrete-jungle/

social areas, the buildings come alive with activity." (p.3) His intention to give variety in open spaces and link the educational spaces to recreational spaces shows an aim for diagrammatical integration by dissolving the borders of spaces. The report evaluates Paul Rudolph's design as "Rudolph's simple, open-floor plans were designed as dynamic, active spaces that foster community." He studied interior elements like benches to provide places for informal conversation and small meetings. Similarly, he played with the dimension of steps and reshaped staircases as a communal place for its users. (p.24)

When the architectural coherence is broken into different spectrums for meeting diversity, then the process of the master plan and its potential functionality in time gains importance. The general approach is named 'unity' which should be sustained through programming rather than the visual pattern of forms. Dober (1996) explains in his book with examples as the uncertainty of future growth and change shows a concrete existence in the design phase. Rather than the finished design for the master plan, development strategies that are projected to the plan should be preferred.[45] Thus, for coherence some general outlines that sustain the campus functionality must be established like traffic, density patterns, improvement zones. Both Hudnut and Dober discuss how development strategies can be supported by the planning layout. Hudnut states an independent unit should be designed and used as a component. Whereas Dober uses the term "planning modules" by considering these planning modules as a part of a chessboard. (p.61) [46]

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[45]Dober, R. P. (1996). Campus planning. Society for College and University Planning.

[46] "The planning module is a chess piece; the campus, a chessboard. Each move has consequences for all other pieces, and there are several strategies in planning which can be pursued with equal success." Further his planning modules can be evaluated as a part of his wholistic approach. Modules are working as the layouts of the gridal organization with modern references or zoning strategy of CIAM. This modular organization is a powerful and potential understanding to explore further developments in different scales.

CONCENTRIC CAMPUS

What looks, in the airview, like a university campus of mammoth scale, is only a fraction of the vast academic community planned for the University of California at Irvine. As UC at Irvine nears the close of its second academic year, 25 structures of several hundred anticipated are on the 1,000-acre site. These include (in semicircle, from upper left) a science lecture hall, natural sciences, fine arts, humanities, social science, dining, and library buildings (all by Associated Architects William L. Pereira & Associates; Jones & Emmons; Bhrock, Ellerbroeck & Associates). They compose three of the six main quadrangles which ring a 30-acre park within the 450-acre central campus (see plan left). William L. Pereira & Associates have sited undergraduate buildings closest to the park, within easy walking distance; then, in concentric rings, related graduate schools and research facilities, housing, parking, and athletic fields. Irvine was "born" with 1,089 students; by 1990, it is expected to serve 27,500.

PHOTOGRAPHS: Page 53, Sigrid Bohring (to right), Zion & Breen (bottom). Page 54, Tom Daly—from "Architecture at Rice: 20," by Paul Kennon (top). Page 55, Los Angeles Times News Bureau.

FORUM–JUNE–1967

55

Figure 2.9. Architectural Forum Magazine 1967 June issue p30 (US Modernist online archives)

Another turning point in campus planning is "motion" in planning layout. The term is first introduced by Gropius and later on elaborated with different design approaches of the movement pattern.[47] How Turner (1984) evaluates this attempt as a "form of bridges or ground-level paths, opened into terraces or courtyards between buildings was above grade or below, and generally functioned as a focus of student

[47] For an expanded understanding towards the circulation of campuses with vehicle consideration. Vehicle and pedestrian circulation systems have been studied with the notion of the need of solid vehicle accessiblity with safe pedestrian organization. It transforms to a layered circulation pattern of planning layout by Groupius. When the case come to the campuses with a high density usage agenda, accessiblity infrastructure of campuses and dialogue with the surrounding urban environment, both pedestrian and vehicle circulations should be integrated and work together efficiently. The idea of "ring road" is readable in many campus cases. There are different investigations on the integration like ramps by Le Corbusier in Carpenter Center for Visual Arts, Harvard, dated 1960, or separation of pedestrian and vehicle layouts in different levels. On the other hand, the most operative approach is "pedestrian spine" first challenged by I.M. Pei and partners in the design of State University College at Fredonia, in 1964.

movement and activity" [48] has direct resonances what the planning strategy of the alley of METU archives. This pedestrian spine idea was reinvestigated in many campus projects. It becomes a primary element of the master plan since it sets the potential of flexibility by defining borders of development and campus form.

The example of Tougaloo College by Gunnar Birkerts & Associates in 1965 was designed with the idea of "a design for a process not for a final result".[49] This approach can be traced in various campus projects since it is the embraced idea of the time in architecture to design the living, adaptable project for the developing society and the future. Thus, the main concept under architectural organization with the infrastructural articulation has been used to present the architectural project widely at that time. For example, in Architectural Magazine 1967 Focus section (figure 2.9) University of California Irvine is underlined as 'Concentric Campus'.[50] The diagram at left bottom used to clarify how ring road is established for the general circulation in campus. With textual information, there are concentric rings that define density levels with programmatic reflections. The final ring, which is a vehicle ring, encloses the built environment. So, this textual part can be evaluated as the representation of the campus architecgunture and the notion of the time that understands and tells the story of the architecture of a project, in particularly a campus project.

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[48]Turner, P. V. (1984). Dynamism, change, and renewal. In Campus: An American planning tradition 249–305. essay, Architectural History Foundation u.a. The MIT Press

[49] Newman, O. (1966, May). The New Campus. The Architectural Forum, 30–56.

[50] Focus. (1967, June). Architectural Forum Magazinel Magazine, (06), p.55.

2.1.3 Importance of METU

In the postwar campus context, Middle East Technical University in short METU is presented as a milestone with its pioneer role.[51] METU was founded as a campus university and as a campus case, it responds to all aspects of the planning of modern campuses discussed above. The selected site was a 4,500 hectares ground of Anatolian prairie, 5 kms away from the city center (accepted as the TBMM, the Grand National Assembly).[52] It is important for Turkey since it is established as a modern university in the context of the developing Republic of Turkey. The METU is one of the second-wave modernization projects in Turkey in the half of the 1950s.[53] It became a leading example for following universities.

After the Second World War, social utopias are associated with Turkish modernism. In this context, the METU project has been a product of Turkey's desire for social and ideological modernization. Urbanism was the ground for the realization of the new modern society with the norms and standards of public life.[54]

Designed in the 1960s by the architects Altug and Behruz Cinici, METU Campus is a pioneering establishment in Turkey for modernist approach "With its highest ambition of design qualities in different scales, it was presented as a great example representing the "ideals of Modernity" in Turkish architecture."[55] The architects also worked on two other campus projects. According to the records Erzurum Atatürk University is designed in 1956 together with Enver Tokay, Hayati Tabanlıoğlu and Ayhan Tayman and Behruz Çinici. The main design agenda is noted as to revitalize

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[51] Ayşen Savaş et al., "Research and Conservation Planning for The METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici Ankara, Turkey" (Ankara, 2020).
[52] METU Campus Planning Preliminary Report (no date), Source: Salt Research Altuğ-Behruz Çinici Archive
[53] Sargın Savaş, A. and Sargın, G. A. "A University Is a Society: An Environmental History of the METU Campus," *The Journal of Architecture*, no. 21 (2016): 602–29.
[54] Kenneth Frampton, *Modern Architecture A Critical History*, Fourth (London: Thames and Hudson, 1980).
[55] Ayşen Savaş, "METU Campus", Brownbook Magazine, 2018

the cultural sphere of the East Anatolia by establishing a scientific educational institution.[56] The second campus design was Diyarbakır University in 1970 by Altuğ and Behruz Çinici which their design was held in third place in the competition.

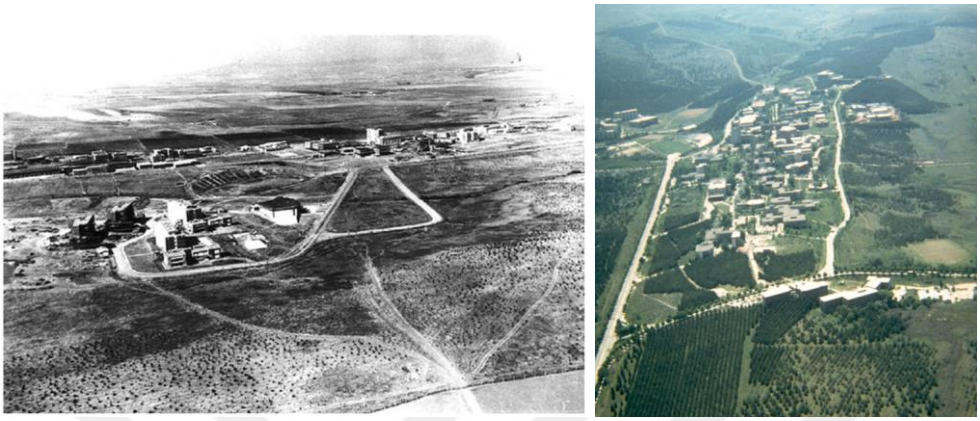

Figure 2.10. Site photograph of METU Campus from 1960s. Source: The Aga Khan Award for Architecture Report

Among many projects in urban scale and, university projects, METU had a great emphasis also in Turkey. In those projects, METU with its comprehensive urban scale as a campus with its location in the new capital city Ankara raises its remarkable impacts. Ankara reserves many new projects for the ideal city to set an instance for a new Turkey which recognizes the city of Ankara as "the representation of modernism" in the early years. The selected design represented the same modernist principles. [57] As stated by Savaş "the Cartesian tool, grid, formed the general design of the campus, which performed in different scales and in three dimensions as a lattice".

Over the years, the METU campus and university's education program would go beyond its purpose of being an example of modern architecture and modernization projects of the new republic in Ankara. It has become one of the most remarkable

[56] Arkitekt Magazine. 1966. Vol.323 p.109. Source. Salt Archive
[57] Sargın Savaş and Sargın, "A University Is a Society: An Environmental History of the METU Campus."p.81

modern campuses in the Middle East. This can be reasoned by being awarded by Aga Khan Awards for its forestation program which serves a great shift in its architectural usage and life for its society. The METU Campus today has the largest green space in Ankara. When the site plan of METU was introduced in the 1965-1966 General Catalogue, the initial concept of how the campus should look like is depicted. There were no direct agenda about afforestation of METU Campus.[58] However, the institutional vision raised by Kemal Kurdas the rector of the time leads the landscape project with the assistance of the architects Altuğ and Behruz Çinici between 1958 and 1960. The project was held together with the students and personals of unfinished campus which can be elaborated as the first realization of the campus society. METU forest becomes the physical boundary of the newly established university. Later, it becomes an ideological element to protect the society of the METU from the rest of the city.

Also, as the first building of the campus, the faculty of architecture building was very unique since it gained the Getty Foundation support within the Keeping It Modern conservation agenda.[59] Documentation was selected as a project motto and the main tool of conservation. Its documentation from the design process to the establishment as an institution has been archived in detail by the research team. This documentation further includes the technical, architectural, social, and historical information about the building and referred both to the study of the existing documents of/on/about the building. The potential of its diagrams and drawings with grand narrative of the campus which has already elaborated with the documentation mentioned above was found significant.[60]

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[58] Re-Forestation Programme of the Middle East Technical University. (n.d.).
[59] METU Getty - Keeping It Modern Project started in 2017 after being awarded by the Getty Foundation with the “Keeping It Modern” grant. Prof. Dr. Aysen Savaş Sargın is project manager and the head of the “Architectural Team”

Besides all the reasons discussed above, the author as a student of METU experiences its unique modern life and as an architect who learns modern architecture by living in it believes METU Campus can be elaborated for the definition of modern campus and ensures the ground zero for parallel reading and the network of modern campus architecture.

CHAPTER 3

MAPPING

3.1 The Act of Mapping

According to the Meriam-webster dictionary, a "map" is defined as "a representation, usually on a flat surface of the whole or a part of an area" or "a diagram or other visual representation that shows the relative position of the parts of something". The term has been in use since the 1580s. In the 17th century, it was commonly used starting from 17th century in a figurative sense to denote a detailed representation of anything.[61] In its various uses, the term "map" can refer to cartography, in other words the process of making map, to mathematics which is a synonym for a mathematical function and its generalizations, and to logic as a synonym for functional predicate. Etymology of the term "map" is from Latin *mundus mappa* where 'mappa' means "napkin, cloth" indicating the surface of map, 'mundi', or 'mundus' means "of the worlds".[62]

The Intergovernmental Committee on Surveying and Mapping (ICSM) defines a map as "a representation of a selection of real features on the Earth". Its purpose is to capture the relationships between features. ICSM classifies maps into five types: general reference, topographical, thematic, navigation charts and cadastral maps and plans. Moreover, the committee constitutes the key characteristics of maps such as accuracy, scale, emphasis or omission of certain features, two dimensionality, the use of mathematical formulae, and the use of a reference system.[63] Starting with its

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[61] Andrews, J.H. (1996) *What was a Map? The Lexicographers Reply.* Chepstow / Wales / UK. https://edisciplinas.usp.br/ Retrieved from 20.11.2022
[62] Retrieved from https://www.etymonline.com/word/map access online 8.11.2022
[63] Retrieved from https://www.icsm.gov.au/education/fundamentals-mapping/overview-fundamentals-mapping access online 8.11.2022

definition, maps and mapping reveal a level of complexity and serve interdisciplinary purposes.

There are examples of mapping dating back more than 5,000 years, demonstrating that humans have long recognized the importance of maps and mapping practices. [64] The clay tablet from Babylonian shown in figure 3.1 depicts Babylon in the center surrounded by rivers, mountains and an ocean. It shows the map maker's interest in recording the location of places with references. The tablet was likely intended to be retained as a record and may have been used as a source of learning. Since then, the agendas of maps and mapping have evolved in terms of scale, complexity, and detail.

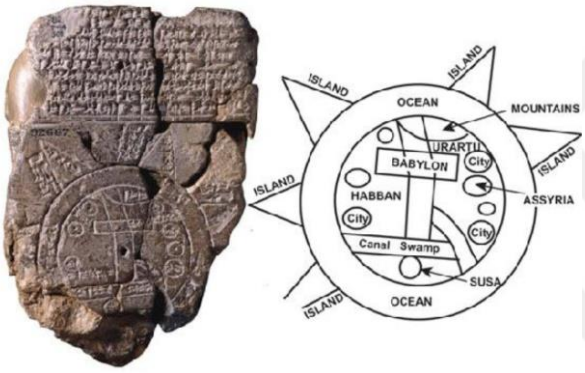

Figure 3.1. Graphic reproduction of the *Babylonian Map of the World* in the collection of the British Museum

The term "geography" had been firstly used with reference to Ptolemy's world map (150 A.D.) which is the map of the known world at that time on a single page.[65] From more schematic representations to traces of cartographies, this map has been elaborated in various frameworks beyond cartographic objectives. Aside from the

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[64] Kachmar, *Map it out: From Babylonian Clay to GIS: Blog* 2021

[65] "Ptolemy even invented ways to flatten the planet (like most Greeks and Romans, he knew the Earth was round) onto a two-dimensional map. What did he call his new technique? 'Geography.'" Thompson, C. (2017) "From Ptolemy to GPS, the Brief History of Maps". *Smithsonian Magazine*.12.07.2022.https://www.smithsonianmag.com/innovation/brief-history-maps-180963685/

technological limitations of the time that limited the ability to produce accurate projections, the intellectual level of abstraction used in ancient maps is applicable in terms of abstract machine of a modern diagram has. Furthermore, the representation of land through text and graphics encapsulates the knowledge contained in the map, allowing the reader to engage with it through both visual and verbal channels.

The configuration of a map from an object-based perspective, and the constitution of mapping or map making from author's point of view, are two cryptic positions that can be inspected. It can be said that maps as objects are intertwined with their source objects, which do not have to be land, as they can be fully visual or a combination of text and visuals.

However, the map is not the object itself. Alfred Korzbybski, a mathematician, states that: "The map is not the territory."[66] He argues that the description of the things is not the thing itself and contextualizes the map with four definitions. First, "A map may have a structure similar or dissimilar to the structure of the territory." Second "Two similar structures have similar 'logical' characteristics. Thus, if in a correct map, Dresden is given as between Paris and Warsaw, a similar relation is found in the actual territory." Third, he defines the relationship between the object and its representation: "A map is not the actual territory." In fourth definition he raises the problem of representation in the following sentences.

> "An ideal map would contain the map of the map, the map of the map of the map, etc., endlessly…We may call this characteristic self-reflexiveness."

Although this approach is derived from a scientific understanding and the study of mathematics, it can be evaluated with the echoes of modern art, calling Magritte's painting "Ceci n'est pas une pipe" (This is not a pipe). While the painting and the

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[66] Korzybski, A. (1958). *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics*. Lakeville, CT: International Non-Aristotelian Library.

subtitle appear to be contradictory at first, it soon becomes clear that they are not: Magritte has created an image of a pipe, not a physical pipe. However, it can be said that his authorship set the outer relationships, with invisible operational projections towards the art, and artistic networks. In this regard, this example and the relationship can be significant to guide the architectural authorship and the design process of map making.

According to Foucault (1983) modernism's declaration of independence has been abstraction, while representational realism has been buried. When discussing the level of representation and interpretation, the terms "*resemblance*" and "*similitude*" are distinguished. Foucault defines resemblance as "presumes a primary reference that prescribes and classes" which copies in a mimetic relationship to the object. On the other hand, "similitude circulates the simulacrum as the indefinite and reversible relation of the similar to the similar." His definition identifies similarity with a "reference anchor." With an endless series of repetitions, the thing becomes a statue of being a "model," providing an opportunity to liberate the representation from its rigidity.

Harley (2002) elaborates on the issue of maps and mapping from the perspective of the author, including the social relationships in the production process. He accepts that the map is a product of social history in his book *The Nature of the Maps*. He deconstructs a map into three layers. These layers are formed with respect to references; following Panofsky's (2001) approach to iconology of the map, with respect to Foucault's (2007) approach to the production of a map as a product of the social knowledge, and lastly with reference the language.[67] In this regard, the production of a map and its graphic language cannot be thought apart from either its

[67] Harley, J.B. (2002): The New Nature of Maps: Essays in the History of Cartography. The Johns Hopkins University Press, Baltimore. In relation see the book Panofsky, E.(1996): Perspective as Symbolic Form, Zone Books. The MIT Press, Cambridge, Foucault, M.(2009): Security, Territory, Population: Lectures at the College de France 1977–1978, St Martin's Press, New York

author and their ecologies nor its audience and their ecologies. The term ecology refers to Felix Guattari's book *Three Ecology* which includes three aspects; objectivity/materiality which studies the relationships between things and named as environmental ecology, subjectivity/sociality, which is based on experience, and prehension/mediality and named as mental ecology focusing on relationality and the matter of perception.[68]

In this regard, examining current mapping practices in relation to architecture can help to understand how theory is put into practice. Laura Kurgan[69] who is an architect and an articulate maker of maps, in the book *Close up at a Distance; Mapping, Technlogy, and Politics* (2012) discusses mapping as both theoretical and practical problem. The book explores how specific mapping technologies aim to orient bodies in space, focusing on the power of scales and how it shapes perceptions of reality. Kurgan introduces her technology-based creative cartographic works as a part of the techno-social milieu in the book. She connects cultural readings with satellite imagery. Many scholars have pointed to this example to question the nature of mapping and its current role.

Kurgan's study is very current in terms of using the recent technological tools in the practice of mapping. The work presents the complexity of the mapping process with the digital data and changing conditions of the data processing. As Kurgan writes,

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[68] Further, see 'ecosophical perspective' or 'ecosophical logic' in the book. Three Ecologies discusses the increasing deterioration of human relationships between the social, the psyche, and nature caused by the overwhelming existence of machine development with mass-produced signs, images, syntax, and artificial intelligence. In this respect, the true dialogue of the act of mapping and map should be re-explored.

[69] "Laura Kurgan is a professor of architecture at the Graduate School of Architecture Planning and Preservation at Columbia University, where she directs the Center for Spatial Research and the Visual Studies curriculum. She is the author of Close Up at a Distance: Mapping, Technology, and Politics (Zone Books, 2013). Her work explores the ethics and politics of digital mapping and its technologies; the art, science, and visualization of big and small data; and design environments for public engagement with maps and data." Retrieved from the official website Cornell AAP (Architecture Art Planning) in 17.11.2022

> "Projects included here don't only talk about maps, images, data. They seek to talk with them – to put them to use in ways that are critical of or that enlarge our conception of where we are and might be in the world" (p. 36)

In this way, her approach is similar to the argument of D.H: Lawrence's argument that: "the map appears to us more real than the land" and reflects Deleuze's *Foucault* which discusses the mapping power with its various actors as an abstract map, dynamographic. A map can be more comprehensive or striking in its ability to convey the essence with the manifestation of abstraction and understand the social, political, and spatial contingencies. Despite Kurgan's intention to mutually construct mapping theory and practice, her work has been criticized for its artistic appearance. The work is composed of the juxtaposition of images of the same location at multiple scale levels along the gallery wall which undermines the legibility of patterns in the map.

Kurgan's conceptual work attempts to establish a social-technical hierarchy of viewpoints that rewrites reality from an artificial abstraction for the map reader/viewer. "The resulting image is no longer hard data. It is a soft map that is infinitely scalable, absolutely contingent, open to vision and hence revision" (p. 204). Based on this, maps and its practice have been framed as an author layered works that cannot be thought of as unprocessed. However, they are already processed for the purpose of turning into knowledge and are open to interpretation by any reader. Beyond academic discussions, maps may contain an artistic layer according to their author.

In a similar fashion the study of Genz and Lucas-Dragon provides insights into the revisiting perceptions of mapping and mapping practice. They explore that mapping can be used as a methodological tool in urban settings within the cross-disciplinary fields of architecture, urban anthropology, and art. Their observation is that academic and non-academic research bodies face challenges in visualizing and analyzing urban life, social connections and spatial relationships with urban actors. Therefore,

mapping can be a valuable tool for addressing these challenges by adopting collaborative and interdisciplinary approaches. Genz (2017) states,

> "Mapping can be used as a research tool to make social and spatial practices and the interactions in space visual and tangible. By visualizing spatial practice and interpreting a map, researchers can experience data that they were not even aware of."

They cover the prominent notions of mapping in different disciplines to build up an integrated discourse on mapping accompanied by a narrative rethinking of mapping. They first decode the mapping practices in different fields, to deconstruct their biases and explore the mapping as a revitalized approach. This decoding primarily targets urban anthropology and architecture.

In urban anthropology, mapping is contemplated as a mental. It is called cognitive mapping, a technique used to generate two dimensional representations of spaces and places, and the actors and their relationships with each other. These maps are found useful for speculating on spatial ideas and connections and have been applied in the Urban Ethnography Lab Workshop in 2017. The leading question in this research is "How is urban space constituted?" The outline of the practice is inherited from Chicago School which is known for its pioneering work in urban research studies. Lindner (2007) argues that Chicago School mapping is one of its fundamental methods. The core anticipation is uncovering emotions connected to urban space. On this basis, Genz and Lucas-Dragon also refer to Greverus' (1972) view of mapping as a "readable text" that deals with cultural perceptions of space and its usage. Along with that, cognitive mapping is seen as an output of "identity-forming" process of everyday urban life and is used evaluated as in similar fashion to capture symbol systems and gain access to interpretations of symbolic structures of the city. Thus, they state that a map is considered as one piece of "urban data" and legible as "field-notes". Alternatively, Ploch (1994) delineates that a cognitive map is also an "artefact" that reduces the complexity of "urban knowledge" by projecting reality onto the information ground. This approach is intertwined with subjective

experience, and the outcome may be controversial for users such as anthropologists, sociologists, geographers, and urban planners.

In addition to cognitive mapping, Genz and Lucas-Dragon study architectural mapping, including a concept called "counter mapping." This critical approach challenges dominant power structures, as described by Denis Wood (2012) use of the term "counter mapping" to refer mapping strategies that resists dominant power structures. This mapping style is often used for social and political conflicts and forms of resistance. Genz and Lucas-Dragon interpret the term "counter mapping" to enhance the dialogue between the map and the reader, connecting the map data to the knowledge it reveals. They refer to this dialogue as "a form of a constant dialogue". In this regard, visible authorship is required. The reason behind it is presented calling their words: "to clarify for what purpose the map was actually created and what information the map might hide." Inevitably, this discussion raises the question of mapping medium. The display of maps and the medium should be considered in relation to the artistic intentions of architects. The art and design aspects of architecture can help overcome limitations of two dimensional, "flat-drawn" maps. Thus, the main aim of counter mapping is to is to create a method that makes authorship, purpose, and audience visible and traceable.

Genz and Lucas-Dragon's decoding experiment results in figuring out five key components; (1) involved, (2) conceptual, (3) inventory, (4) ethnographic and (5) processual. These components finally constitute their current mapping practices. "The Decoded Mapping Practice" developed during the Summer School at the Georg-Simmel Center for Metropolitan Studies in 2016 with the help of many lectures, exercises, fieldwork, and discussions on production of critical and discursive mapping. The aim of this work was to provide concrete approaches to overcoming the current boundaries of mapping by finding tools to structure and materialize their own sensing through creative visualization. According to Genz and Lucas-Dragon, the urban, the body, and the subject are involved in sensing. Scanning and observing are added to the practice as active elements that consider the author and map maker's personal "author layer". This derives from the individual's bodily

and mental experiences. As a layer started to be derivatives depending on the peculiar experience (bodily), as well as the mental individuality which and shapes the knowledge production process, starting from the selection of how the author narrates, highlights, hides and positions a certain intention or story. This approach recalls the "participatory observation" method of ethnography. In this way, Genz and Lucas-Dragon see the author as a medium him/herself, particularly in non-territorial, culturally based maps that they call "Mapping the Unmappable".[70] This point is significant for this thesis study on mapping production.

3.1.1 The Mapping Trials in Ongoing Research Project "Campus Utopias"

In this section, the main concern is to discuss the mapping trials during the Campus Utopias course and to present a selection of course outcomes that will inform this thesis study.

It has already been discussed the process of prepasring the initial list and the challenges faced in converting it into a digital, editable format. The prepared bulk list in spreadsheet format, is strongly bounded by virtue of 'Excel' medium. It has attempted to overcome the constraints of the medium by creating sub-lists with color coding, but challenges still remain in terms of categorization and operations on visuals elements. To better understand the dialogue between text and visuals in these cases, the structure of campus books will be reviewed. This will provide a framework for analyzing and organizing the collected information. By understanding the connections between text and visuals, it can be better understandable the dialogue

[70] Genz, and Lucas-Dragon (2017) retrieved from https://journal.urbantranscripts.org/article/decoding-mapping-practice-interdisciplinary-approach-architecture-urban-anthropology-carolin-genz-diana-lucas-drogan/

that takes place within these campus books and use this knowledge to inform the thesis study.

In his book *"The Postwar University: Utopianist Campus and College" S. Muthesius (2001)* sets the structure of the evolution of campus design in comparison to colleges in consideration of geographical contexts, including England, the United States, and North America. He notes that the distinction between college and campus in these regions is influenced by the political, social, and economic conditions of the time. The shift from college to campus university reflects the changing institutional approach to higher education in these countries. Muthesius uses geography as a way to map the production of knowledge in the university setting. However, he also acknowledges that geography is not the only factor that shapes the design of a campus. The local urban or suburban context, as well as the physical, economical, educational, cultural, and social dynamics of the region, all play a role in the design of a campus. These aspects can be traced from national scale to the local set multiple hyperlinks. Also, the architect with his/her background and the relationships between different power bodies also influence the design of a campus by comprising another design layer. For instance, the Illinois Institute of Technology by Mies van der Rohe, the East Pakistan Agricultural University by Paul Rudolph and the University of Constantine by Oscar Niemeyer are examples of how an architect's position is in relation with the geographical context can impact the design of a campus. However, these three campuses are not directly comparable due to the unique factors that shaped their design.

Figure 3.2. The first mapping trial is based on geographical information of the selected campuses prepared by the author in 2020.

Based on initial readings, the first attempt at mapping the campuses was based on geography, as illustrated in figure 3.1. The goal was to visually locate the campuses on a map. It tries to retrieve links between different categories identified with different colors. The selected campus cases have been abstracted as dots and placed on an abstracted world image. The dots were assigned three different colors to represent three sub-lists: red corresponds to the Getty Awarded campuses; blue is for campuses with iconic buildings, and yellow is for megastructures. However, as the number and color of the dots increased, the limitations of this approach in terms of reading became apparent. Since juxtaposed dots increase, the clarity has been complexified. The dots on black world abstraction did not adequately represent the unique characteristics and contexts of the individual campuses. Overlap and juxtaposition of the dots made it difficult to understand the relationships between the different categories. Ultimately, this approach had limited representation power and did not effectively illustrate the diversity of the campus cases.

Additionally, another problem with the initial approach was the lack of representation of scale. Because the campus cases were abstracted as dots, it was

difficult to understand the relative size and importance of campuses as individual architectural beings. In order to better understand the potential for further reading, it was necessary to view the lists at multiple scales and in a geographical context. To address these limitations, the list and the location information is transferred to ArcGIS, an online geographic information system that allows users to build interactive web maps from databases. This platform helped better visualize the campus cases and understand their relationships to each other and to the broader geographical context. Still, the campus cases have detached from some aspects like political and social information spheres.

Figure 3.3. The second mapping trial is based on geographical information of the selected campuses prepared by the author in 2020.

This trial of shifting the medium to an online platform offers an updatable interface. While zooming in on different levels, from a world scale to a campus, the representation of a case as a dot remains constant. Each zoom action creates a new base of information, which the reader can access and interact with. The retrieval of information by the reader varies in that sense for further interactions. For example, each geographical base has a different set of information layers, depending on the scale, country, region, and city. ArcGIS provides these geographical bases in a standardized way, allowing for visual information about the campus and its buildings and their location in relation to their surroundings. The advantages are zooming tool is to provide visual information like campus as an urban patch, its buildings and their location with its surroundings. Still, this medium is detached from the connections

between actors and agents. Moreover, the map of the interface gives the current land articulation instead of specializing according to each case and their design and construction dates. The functional lead between architecture and society is hidden, making it difficult to understand and operate in a comprehensive way. Thus, these trials' shortcomings do not enable the reading of campuses' knowledge in the actor-network frame and operating in totality. The complexity of information that tried to transfer to the medium may be an impossible act with epistemological breaks defined by Bachelard (1938).

The World Higher Education Database supported by International Association of Universities and UNESCO which is stated as a unique database that provides authoritative information on higher education systems, credentials and institutions worldwide presents that there are over 20.000 higher education institutions in 196 countries.[71] In their interactive map, the number of universities, public and private together were shown. When one country is selected, the list of the higher education institutions; colleges and universities were listed in another webpage either according to the initials or the date of they became a member of this association. After the selection of a specific institution, in a new webpage the database presents the available information in the categories; General information ranging from the address, website, private or public, history, language of instruction, accrediting agency, admission requirements; Current officers, Division which are the available academic programs; Degrees and Academic Periodicals; Student and Staff Numbers.

[71] "The IAU WHED Portal has been THE reference tool since 1950 for national higher education authorities, government agencies and national academic bodies. Since the adoption in 2019 of the *UNESCO Global Convention on the Recognition of Qualifications concerning Higher Education*, each HEIs listed are identified with a unique identifier: the Global WHED ID." Retrieved in 02.01.2023 from https://www.whed.net/home.php#:~:text=In%20collaboration%20with%20UNESCO%2C%20the,higher%20education%20institutions%20(HEIs).

Figure 3.4. The interactive “The world of higher education” map of IAU WHED.

The details of the information in the categories differ depending on the available information. Thus, the historical information is generally limited to its foundation date and its names if changed. Also, there are either no photographs or a couple of photographs that are linked to the information page of the institutions. The architectural information and social and educational life of the institutions seems to be detached from the website database.

Another map which can be evaluated a trial similar to the ArcGIS features 1704 universities in World called as “Universities in World”. [72] This map has two interfaces linked to each other; the first one is geography based and the second one is photographic based regulated as grid. Main aim of the map is to provide the names, location and the photographs of the universities bring together as a tourist attraction.

[72] The map: https://www.touristlink.com/global/cat/universities/map.html retrieved in 20.01.2023

Figure 3.5. Map of Universities in World by Touristlink.

The network of campus architecture established by different urban and university projects requires different strategies for evaluation. The learning outcomes of the Arch 505 Campus Utopias course suggest that campus design is operational on at least four scales; city/territory, campus, building and detail. Thus, to indicate the location information like in the archGIS and following examples as a pin cannot represents these four scales different aspects. As a note, art can be evaluated through all four scales as well as landscape and nature. Additionally, the location can be considered in terms of the political and economic factors that influence space usage and material selection. In cases associated with ‘global south’ or ‘post-colonial’, the

political and economic influences are particularly evident. Since the scale necessitates different fragments set by actors as power bodies and inhabitants cannot be traced easily and connected with a stylistic frame by just reducing them to direct links. Although the representations of the campuses through an orthographic set; a plan, and a model can give the International Style references in different spectrums, each campus' unique interpretation also rewrites its own modernism definition with their unique assemblages.

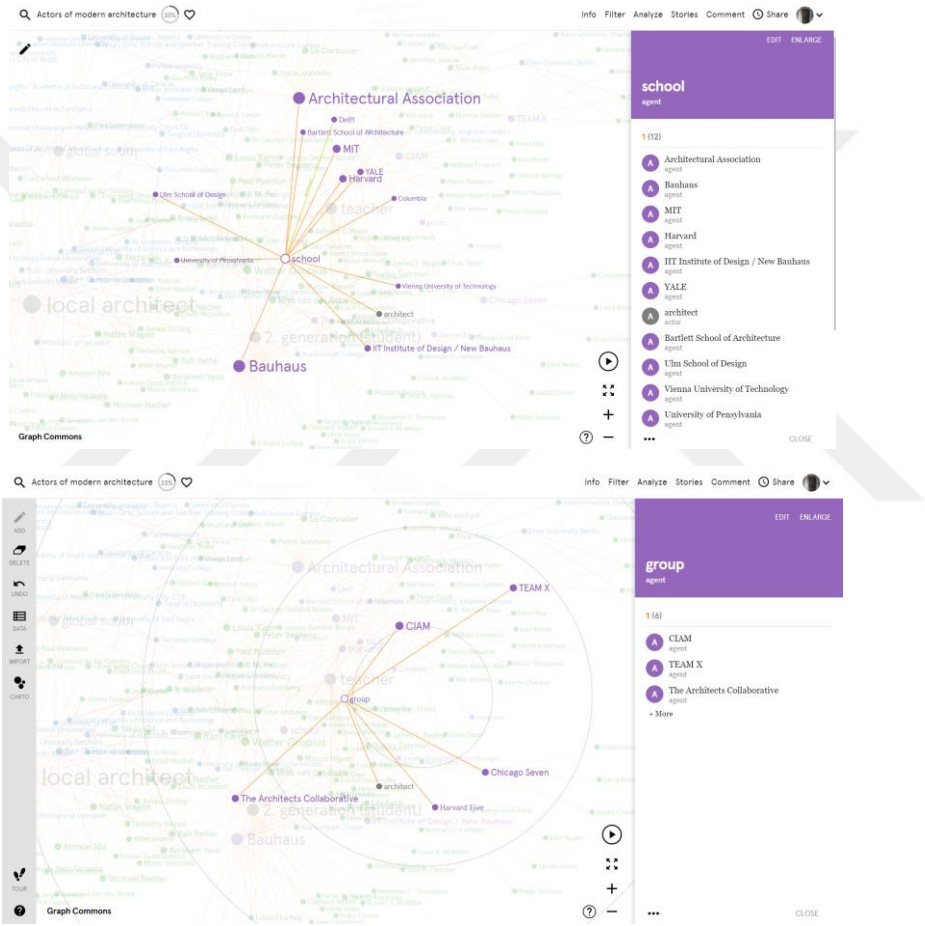


Figure 3.6. The actor mapping trial based on architects of the selected campuses in GraphCommons prepared by the author in 2020.

Therefore, understanding the leading actors involved in the design and construction of modern campuses is crucial for making comparative projections between actors and architecture. One of the leading actors is presumed to be an architect, who plays

a key role in the design process and the representation of the architect's project. Tracing architects as actors expands the definition of actors to include not only architects, but also educational figures and their agents, such as schools, congresses, and teams… Mapping through actors before examining modern campus cases can be a useful method for gaining further information. In this stage, the collaborative platform Graph Commons is explored as a mapping medium. This mapping approach uses cognitive mapping strategies, such as "readable text" (Greverus 1972, 1994).[73]

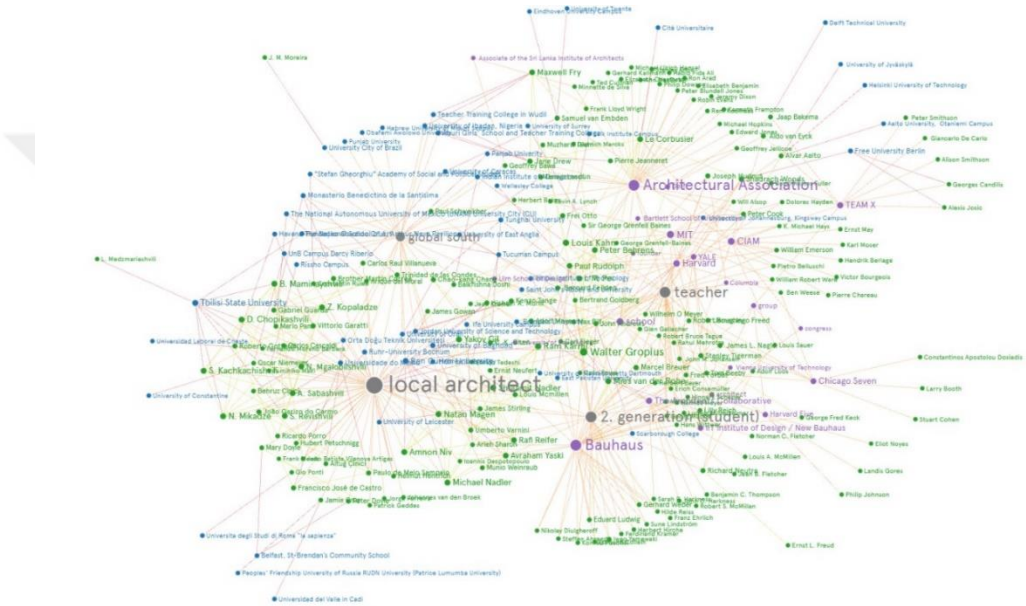


Figure 3.7. The actor cloud mapping based on architects of campuses from the bulk list in GraphCommons prepared by the author in 2021.

[73] Further understanding of the mapping is developed with the graduate course AH 516 Architectural History Digital Humanities Lab conducted by Asst. Prof. Pelin Yoncacı Arslan particularly focusing on the theme is how to design architectural history research by curation with thick mapping and network diagramming.

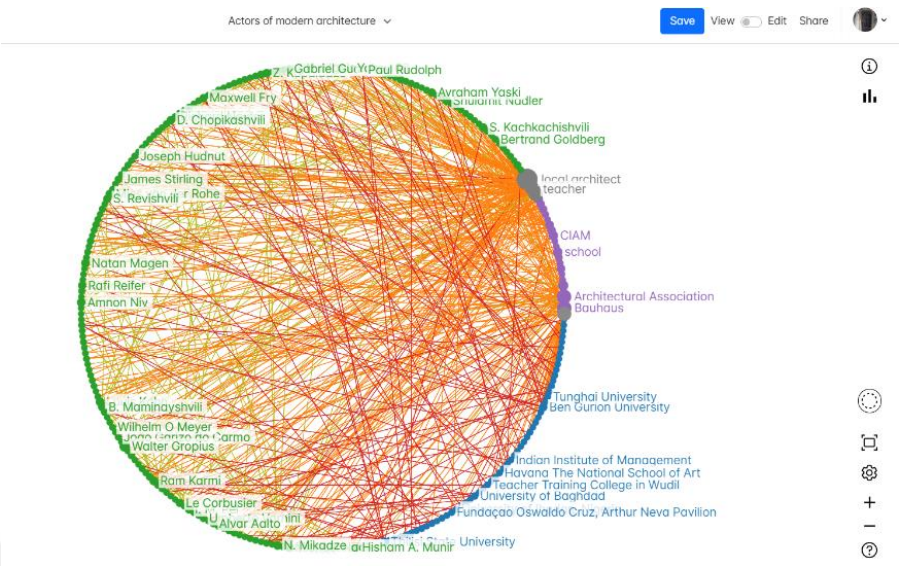


Figure 3.8. The actor cloud mapping circular layout based on architects of campuses from the bulk list in GraphCommons prepared by the author in 2022.

Why actors have such importance can be explained by tracing one example. Joseph Hudnut is discussed in the previous chapter. As the dean of two important architecture schools Harvard and Colombia, he influences many architects with his approach to architectural education. Thus, he became an important actor as an academician and architect in the network. His approach is evaluated as a Bauhaus legacy at Harvard by Jill Pearlman. The hyperlink between Hudnut and Bauhaus reveals that actors and their agent relations are important to see the flow. With his agenda, Walter Gropius joined the GSD faculty as chair of the Department of Architecture and brought Marcel Breuer, to help revamp the curriculum. From Hudnut and Gropius, the projections can be traced to the students of Harvard which are Paul Rudolph, I.M. Pei, Philip Johnson, Fumihiko Maki, and John Hejduk.

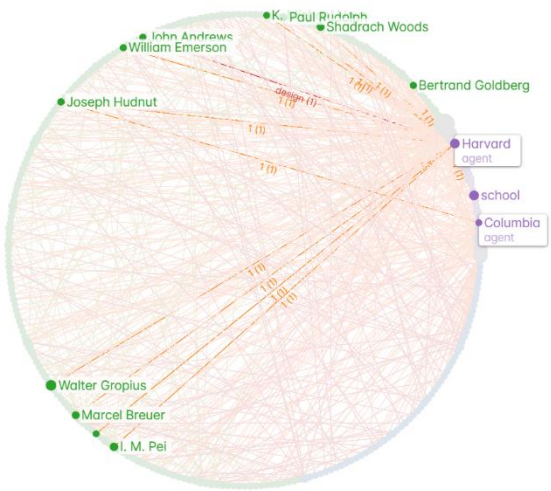


Figure 3.9. The actor cloud mapping circular layout highlighting Joseph Hudnut in GraphCommons prepared by the author in 2022.

Bauhaus as an educational agent generates links in educational and architectural practice. Bauhaus architects can be grouped into two; teachers and students and maybe the third one can be the students' colleagues and local architects. These actors set different links in different contexts, Walter Gropius, Hanner Meyer, Adolf Meyer, Ludwig Mier van der Rohe, Karel Teige, George Muche, Marcel Breuer, Fred Forbat, Carl Fieger… Kögel summarizes the knowledge flow as "The transfer of architectural nformation from the West to the colonies and independent developing nations also includes knowledge transfer through students returning from abroad." Also, their students, like Arieh Sharon, Ernst Neufert, and Alfred Arndt, and their careers show continuations.

Arieh Sharon is an Israeli architect who born in Poland in 1900 as Ludwig Kurzmann, immigrated to Palestine in his teens. He studied architecture in Bauhaus under Hanner Meyer and Walter Gropius. After his return to Israel, his works are known as the Bauhaus style of Tel Aviv indicating the integration of local characteristics. He is the architect of Ife University Nigeria which is called Postcolonial architecture at Obafemi in Ile-Ife Nigeria in the Bauhaus Imaginista article. In the Campus Utopias course, this design is evaluated as a Bauhaus inspired

university campus in Nigeria. The documents that include representational aspects of the university from photographs to drawings are studied to understand different edges and links to the modern architecture and the context. Eran Neuman (2018) who is the curator of the first retrospective exhibition of Israeli architecture as one of the founding fathers of Israeli architecture devotes the exhibition to Arieh Sharon name. He states that even Arieh Sharon is the first recipient of the Israel Prize for Architecture and evaluated as a pioneer for his extensive work for the nation, "the local architects didn't like his design" and added as "It seemed too modern.".

Figure 3.10. The design sketch of Ife University released in the film about the Ife Campus named "Scenes from the Most Beautiful Campus in Africa" by Zvi Efrat[74] published in Bauhaus-Imaginista.

Examples can vary from the University of Baghdad by Walter Gropius to his students I.M. Pei's Tunghai University, and Paul Rudolf's East Pakistan University. Since the educational actors and schools in this network have readable continuations. Different generations and their projections to local events like CIAM and publications, groups like Team X, Harvard Five, The Architects Collaborative give solid traces about modernism and the International Style. However, the projections in the architectural representational level are still detached from the mapping

[74] Zvi Efrat is a Tel Aviv based architect and architectural historian specialized with museumology

medium of GraphCommons. Connections between actors and events is a real challenge in this case.

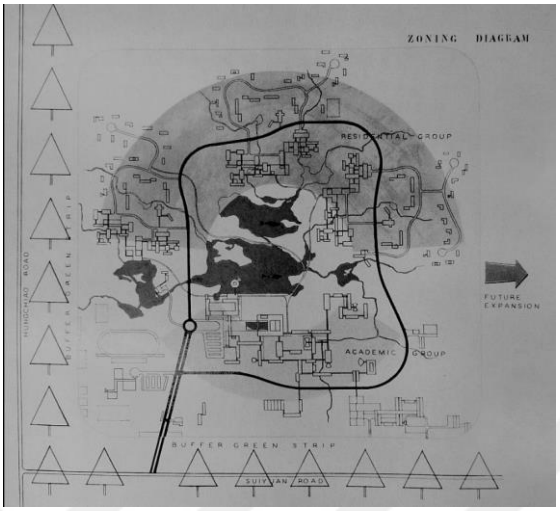


Figure 3.11. Zoning diagram for Huatung University in Shanghai by TAC in: L'Architecture d'aujourd'hui, February 1950, sp26 published in Bauhaus-Imaginista by Kögel in the article "Modern Vernacular- Walter Gropius and Chinese Architecture" The Modern Example of Mapping.

Kögel evaluates the sketches and diagrams of Huatung University as representation of architectural approach with links towards modern architecture and its actors. He focuses on the sketches of pavilions and evaluates them as a reminiscent of Mies van der Rohe's previous works. Moreover, he highlights that Pei's sketches recall the character of the individual buildings of Mies on the campus of Chicago Illinois Institute of Technology.

This actor-network research process also leads to another trial the of structure of the list and its mapping by using GraphCommons medium. At this stage of the research by the Campus Utopias instructors two sub-lists from two specific themes and agencies are listed, campuses designed by the participants of the CIAM meetings and campuses included in the Getty Keeping It Modern Award list. After the links have been set between architects and campus cases, correlations between the cases become a second-phase problem. Like in the sources of the index of post-war

universities, there should be themes and concepts as traceable criteria. However, these criteria cannot emerge out of nowhere in the network of architecture. Their potential to reveal continuity, transformation, or contrast in the architectural approach should be set without interpretation jumps. Thus, collecting the modern campus concepts from a historical overview leads the further links.

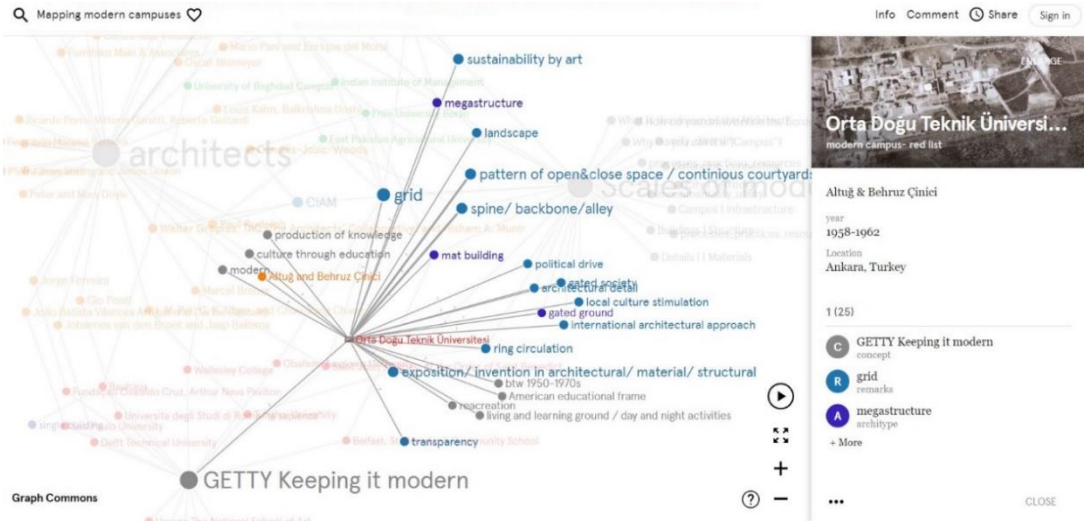


Figure 3.12. The network mapping is based on red and green list in GraphCommons prepared by the author in 2021.

After the part that criteria of modern campus projected to this ground. The following stage is to set links between cases and concepts. For the introduction of these links, detailed research about cases is needed. These links are introduced according to both the text-based information of campuses besides evaluating their architectural representations. Thus, each link is an inference, a representation, and an abstraction of a parallel reading which embodies a great level of knowledge shifts and reductions. Showing these shifts as projections arise is the question of this phase. The way of interpreting the concept with multiple references and the research process reduced the representation of a line link. Thus, from the document to the map several interpretations are not readable. These operational acts on the data hide and limit further reading potentials. Thus, the outcome map gives limited readings about the flow of modern knowledge.

3.1.2 The “New Campus” Article as an Example of Mapping Campuses

The complexity of understanding modern campus has also been explored in the 1960s with many articles and books which are discussed in the previous chapter. The “New Campus” article by Oscar Newman in Architectural Forum Magazine 1966 can be evaluated as a mapping trial. He first introduces Scarborough Campus as a milestone in campus design and after he studied five cases within the integration of text-based information and the architectural representations to provide a parallel reading medium. The selection of five campuses sets the specific framework with a limited network relation. These cases are Berlin Free University, Forest Park Community College, Philips University, University of Illinois, Scarborough College. The way he puts all campus plan drawings on a comparative ground is a projective mapping with a readable representation. This representation gives the Idea that Newman reads these campuses mainly in terms of scale. The base scale is the University of California, Santa Cruz Campus. When the base has been put as a ground zero of parallel reading, it enables us to understand the urban scale of each campus. The theme scale goes further detail from the diagram as such; the proportional situation of buildings within the site and with each other. Newman also underlines the scale issue with the second title. New Campus: “It suggests a changed scale in urban architecture”.

A campus or college is a place where many people work, live, conduct continuous communication, and develop social contacts. In that sense, the article is published with the vision of campus projects have the architectural potential of the time as a laboratory for design concepts. After this first brief, the 25-pages article is evaluated as a trial of documentation Scarborough and other four campuses with photographs and drawings to show the agenda of these projects opens a way in urban architecture towards a new system in a new scale. Furthermore, the actor position of the author, Oscar Newman is highlighted with its professor position.

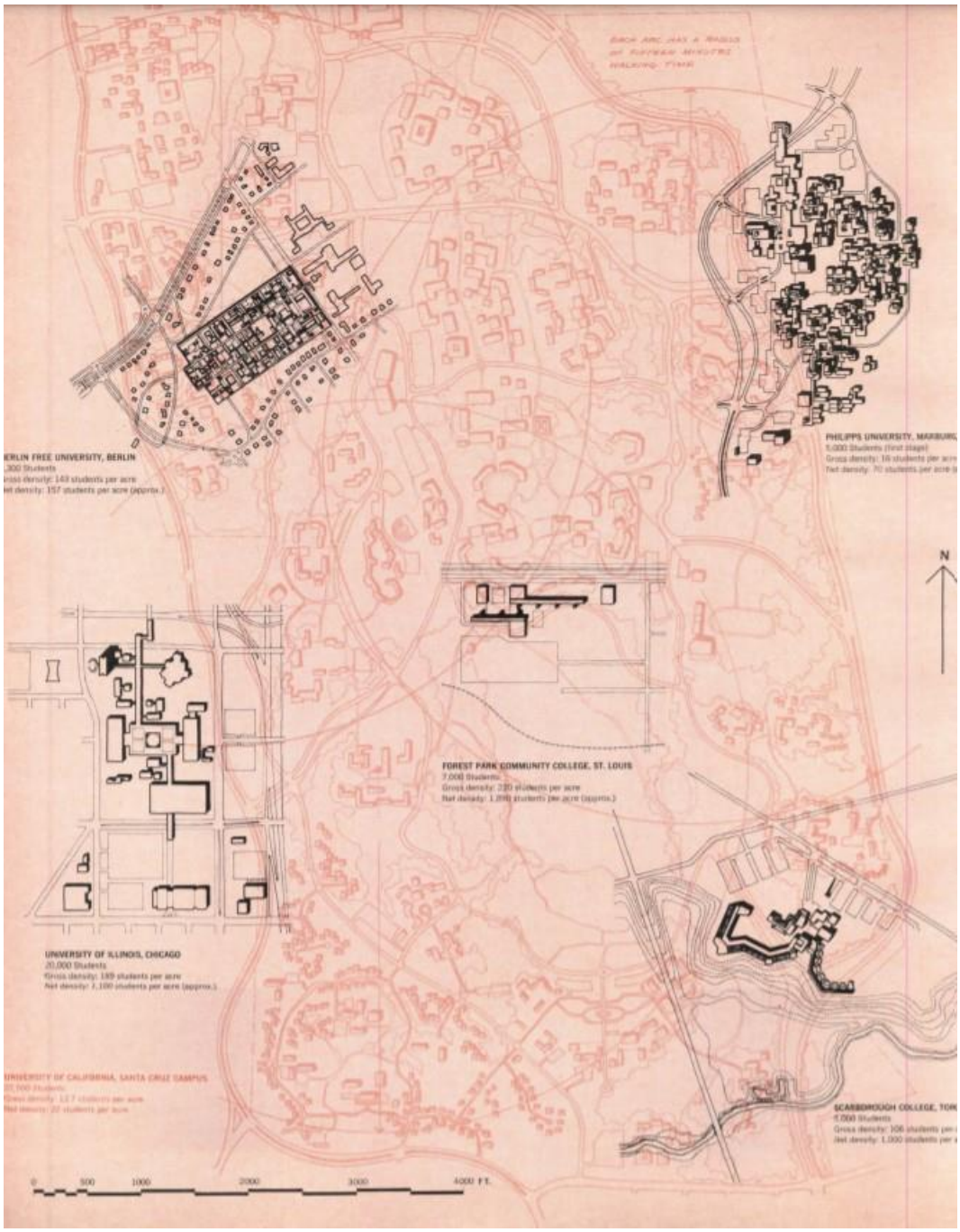


Figure 3.13. The Architectural Forum Magazine 1966 May p.42 US Modernist

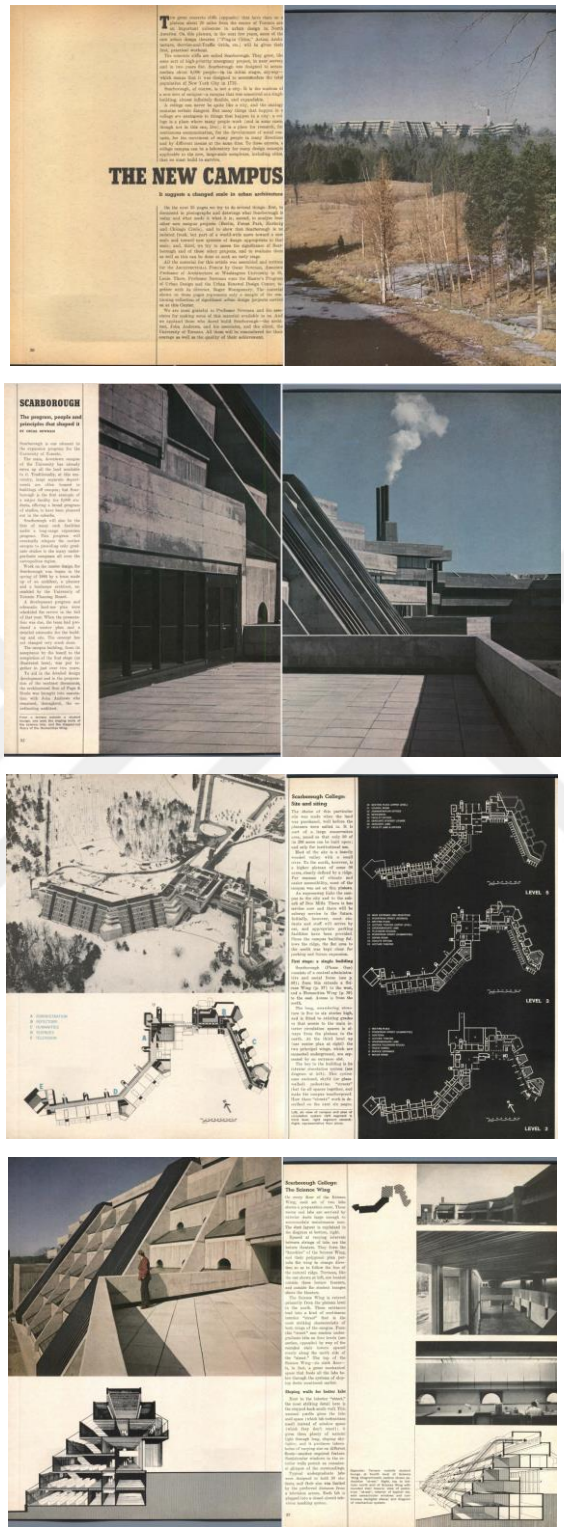


Figure 3.14. The Architectural Forum Magazine 1966 May p.30-37 US Modernist

The first visual has come along after the first textual part. This photograph can be evaluated with reference to the ‘concrete cliff’ comment. This photograph is striking in terms of revealing mega structure scale compared to forestry area. Afterwards, the textual part explains the initiation of this campus idea in the institution agenda. Defining the programmatic terms of the new campus and initial design stages considering the college and site are presented. From the general mass articulation, text and visual dialogue follows an order to give details about the building parts and elements like openings, corridors, lights… The final highlight about this campus is “street” idea as level for pedestrian movement in the building and its finalized element, monumental meeting place.

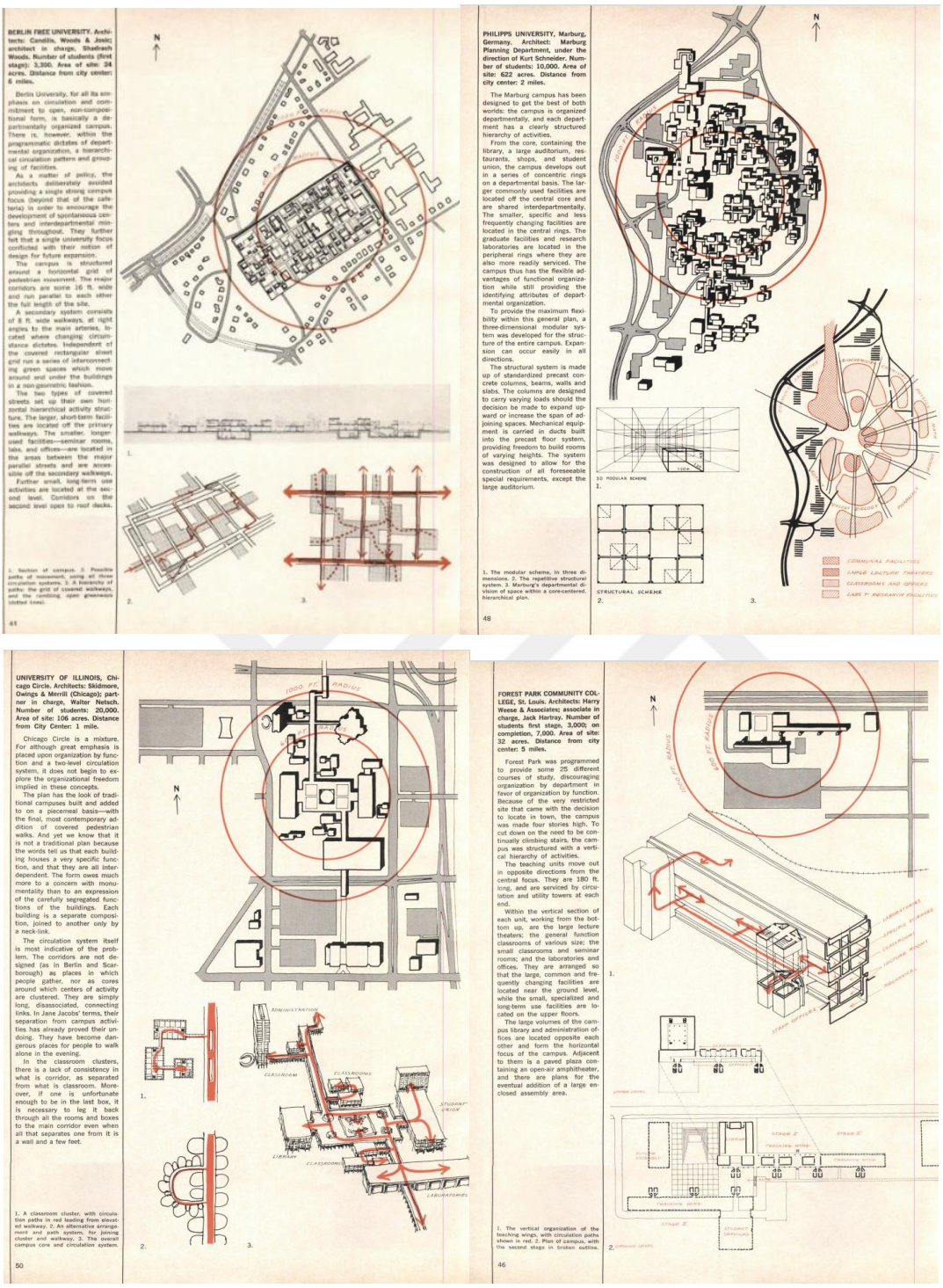
After the first case is discussed, there is a map (figure 3.8) shown with name of “The compactness of the New Campus”. This map is composed of the juxtaposition of 6 master plan drawings. The one in the background with red color can be considered as a base, ground zero in a diagrammatic manner. In the map, there is textual information in two layers. The first one is in capital and bold which names drawings and indicates that they are campus, college, or university with their location. The second one explains three aspects: the number of students, gross density, and net density in order. They still give information about scale, but information detail leads to a position that readers can speculate about flow, circulation, or program through the plan.

The new campus article is further explained “It is characterized by urban density, stress on circulation, and the mixing of disciplines.” Newman’s first sentence declares that the New Campus is the current architecture. The architects’ desire to communicate with society through buildings may find an answer in this architecture.

The selection of these five cases is explained with the following words: The five cases’ form is the result of a commitment on the part of their designers to a lifestyle. Their layouts and densities are interpreted more than their available land or academic policies. He considers architects’ proposals as the representation of faith in high-density architecture for the ideal society.

Newman explains the selected cases one by one. He introduced some fundamental information to define campus cases. This information is composed of the name of the campus, architects, number of students, area of the site, and the distance from the city center.

Each case is unfolded into two pages. The first page has comparatively more visual density than the second page. Each case's cover page is composed of two representation modes of the case: text and visual. Text is ordered as a column in one or a fourth of the page. Text starts with this fundamental information in bold font and further design strategies unfold. In the right part of the page, the stressed visual is a plan drawing with highlights. Then, secondary visuals sections, axonometric view, or diagrammatic abstractions are represented. All these architectural drawings are highlighted with red ink which set criteria and diagrammatically read campus cases. These highlights put the visuals in a parallel reading ground. In a sense, he uses the potential of architectural representation to reveal each case's significance. For each case, he uses the plan, section, and diagrammatic layouts by indicating how modern urban approaches and criteria of campuses correspond. These indications show the way he reads and interprets. In particular, the second page differentiates campuses from each other with their specific design concepts. In that sense, the second page's representational layer is unique to its case. Relatively the text information is derived from the cases' unique aspects which enables to understand more about its living practices, city dialogue, flexibility, and growth approaches. The way he limits the discussions and opens new links within the integration of text-based knowledge and architectural knowledge becomes a modern example of mapping modern campuses in a sense.



BERLIN FREE UNIVERSITY. Architects: Candilis, Woods & Josic; architect in charge, Shadrach Woods. Number of students (first stage): 3,300. Area of site: 34 acres. Distance from city center: 6 miles.

Berlin University, for all its emphasis on circulation and commitment to open, non-compositional form, is basically a departmentally organized campus. There is, however, within the programmatic dictates of departmental organization, a hierarchical circulation pattern and grouping of facilities.

As a matter of policy, the architects deliberately avoided providing a single strong campus focus (beyond that of the cafeteria) in order to encourage the development of spontaneous centers and interdepartmental mingling throughout. They further felt that a single university focus conflicted with their notion of design for future expansion.

The campus is structured around a horizontal grid of pedestrian movement. The major corridors are some 16 ft. wide and run parallel to each other the full length of the site.

A secondary system consists of 8 ft. wide walkways, at right angles to the main arteries, located where changing circumstance dictates. Independent of the covered rectangular street grid run a series of interconnecting green spaces which move around and under the buildings in a non-geometric fashion.

The two types of covered streets set up their own horizontal hierarchical activity structure. The larger, short-term facilities are located off the primary walkways. The smaller, longer-used facilities—seminar rooms, labs, and offices—are located in the areas between the major parallel streets and are accessible off the secondary walkways.

Further small, long-term use activities are located at the second level. Corridors on the second level open to roof decks.

1. Section of campus. 2. Possible paths of movement, using all three circulation systems. 3. A hierarchy of paths: the grid of covered walkways, and the rambling, open greenways (dotted lines).

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PHILIPPS UNIVERSITY, Marburg, Germany. Architect: Marburg Planning Department, under the direction of Kurt Schneider. Number of students: 10,000. Area of site: 622 acres. Distance from city center: 2 miles.

The Marburg campus has been designed to get the best of both worlds: the campus is organized departmentally, and each department has a clearly structured hierarchy of activities.

From the core, containing the library, a large auditorium, restaurants, shops, and student union, the campus develops out in a series of concentric rings on a departmental basis. The larger commonly used facilities are located off the central core and are shared interdepartmentally. The smaller, specific and less frequently changing facilities are located in the central rings. The graduate facilities and research laboratories are located in the peripheral rings where they are also more readily serviced. The campus thus has the flexible advantages of functional organization while still providing the identifying attributes of departmental organization.

To provide the maximum flexibility within this general plan, a three-dimensional modular system was developed for the structure of the entire campus. Expansion can occur easily in all directions.

The structural system is made up of standardized precast concrete columns, beams, walls and slabs. The columns are designed to carry varying loads should the decision be made to expand upward or increase the span of adjoining spaces. Mechanical equipment is carried in ducts built into the precast floor system, providing freedom to build rooms of varying heights. The system was designed to allow for the construction of all foreseeable special requirements, except the large auditorium.

1. The modular scheme, in three dimensions. 2. The repetitive structural system. 3. Marburg's departmental division of space within a core-centered, hierarchical plan.

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UNIVERSITY OF ILLINOIS, Chicago Circle. Architects: Skidmore, Owings & Merrill (Chicago); partner in charge, Walter Netsch. Number of students: 20,000. Area of site: 106 acres. Distance from City Center: 1 mile.

Chicago Circle is a mixture. For although great emphasis is placed upon organization by function and a two-level circulation system, it does not begin to explore the organizational freedom implied in these concepts.

The plan has the look of traditional campuses built and added to on a piecemeal basis—with the final, most contemporary addition of covered pedestrian walks. And yet we know that it is not a traditional plan because the words tell us that each building houses a very specific function, and that they are all interdependent. The form owes much more to a concern with monumentality than to an expression of the carefully segregated functions of the buildings. Each building is a separate composition, joined to another only by a neck-link.

The circulation system itself is most indicative of the problem. The corridors are not designed (as in Berlin and Scarborough) as places in which people gather, nor as cores around which centers of activity are clustered. They are simply long, disassociated, connecting links. In Jane Jacobs' terms, their separation from campus activities has already proved their undoing. They have become dangerous places for people to walk alone in the evening.

In the classroom clusters, there is a lack of consistency in what is corridor, as separated from what is classroom. Moreover, if one is unfortunate enough to be in the last box, it is necessary to leg it back through all the rooms and boxes to the main corridor even when all that separates one from it is a wall and a few feet.

1. A classroom cluster, with circulation paths in red leading from elevated walkway. 2. An alternative arrangement and path system, for joining cluster and walkway. 3. The overall campus core and circulation system.

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FOREST PARK COMMUNITY COLLEGE, St. Louis. Architects: Harry Weese & Associates; associate in charge, Jack Hartray. Number of students first stage, 3,000; on completion, 7,000. Area of site: 32 acres. Distance from city center: 5 miles.

Forest Park was programmed to provide some 25 different courses of study, discouraging organization by department in favor of organization by function. Because of the very restricted site that came with the decision to locate in town, the campus was made four stories high. To cut down on the need to be continually climbing stairs, the campus was structured with a vertical hierarchy of activities.

The teaching units move out in opposite directions from the central focus. They are 180 ft. long, and are serviced by circulation and utility towers at each end.

Within the vertical section of each unit, working from the bottom up, are the large lecture theaters; the general function classrooms of various size; the small classrooms and seminar rooms; and the laboratories and offices. They are arranged so that the large, common and frequently changing facilities are located near the ground level, while the small, specialized and long-term use facilities are located on the upper floors.

The large volumes of the campus library and administration offices are located opposite each other and form the horizontal focus of the campus. Adjacent to them is a paved plaza containing an open-air amphitheater, and there are plans for the eventual addition of a large enclosed assembly area.

1. The vertical organization of the teaching wings, with circulation paths shown in red. 2. Plan of campus, with the second stage in broken outline.

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Figure 3.15. The Architectural Forum Magazine 1966 May p.44,46,48,50 US Modernist.

Finally, the last four pages of the article are spared to reevaluate Scarborough Campus with four campuses' knowledge and give a conclusion to the new campus architecture discussion. (Figure 3.16) The New Campus title comes again with an explanation of the third section as "An evaluation of Scarborough College and of the new architecture which it represents."

THE NEW CAMPUS

An evaluation of Scarborough College, and of the new architecture which it represents

The final unique quality of the New Campus is that it represents (along with some isolated examples of new-town centers in Europe) the first realizations of a new architecture. Its implications as an expression of new values and life-styles override its simple consideration as a single-function building type.

In this light, Scarborough represents a process of organization and a commitment to a pattern of living which is applicable to almost any large-scale problem. Scarborough is a single structure for the daily activities of some 6,000 people. Through its system of organization it enables these thousands to be in close communication—to benefit not only from association by consensus choice, but from association through unpremeditated encounter. This type of association has hitherto been the attribute and sole domain of large-scale, dense urban environments.

Scarborough houses a multitude of functions at a scale that many object to as "inhuman," an intangible that becomes increasingly elusive with examination. It is building become landscape, and as such opens a new avenue for the consideration of what we mean by "human" scale. By its sheer size it is able to tame aspects of a hostile environment while at the same time exploiting topography in a way small-scale building never can.

As an adjunct to its commitment to high density, Scarborough has given its circulation system iconographic significance—making it symbolic of the whole campus and the dominant element of its form. Through the very act of concentration, Scarborough comes to grips with the automobile by simply being able to exclude it from the interaction process of 6,000 people.

Scarborough allows for flexibility and change by organizing a multitude of curricula and disciplines into a system based on providing a variety of different spaces for teaching to be shared by all, rather than simple allocated volumes. It provides for community and privacy by adjusting its circulation system to be either more or less inaccessible, and through the simple device of a vertical hierarchy of organization. Scarborough's total form as well as detailed form is an expression of internal activities and organization, and as such the building is both organic and open.

As design methodology culminating in building form, Scarborough is, without doubt, immeasurably successful: the programmatic analysis, the expression of various activities and circulation patterns, the response to climate and site—all are carried off, not only with philosophical conviction, but with final realization in form that needs no labored functionalist rationale to prop it up.

A vocabulary of form

In any architectural design process, the translation of programmatic factors into building is, unfortunately, not automatic. There is a point, as the Bauhaus learned, beyond which even the best of methodologies cannot take you—where the program and process must finally see its realization, and the architect as artist takes over.

But an artist in creating form does not work in a vacuum. His work is both an assembly and distillation of his accumulated vocabulary of form language. Andrews's vocabulary, at the scale of the total building, owes much to the unistructuralists—from Le Corbusier's plan for Algiers to Theo Crosby's Fulham Study. And in this sense Scarborough transcends the simple problem of campus to indicate directly the form of our future multi-functional, high density urban cores.

But at the scale of the components, Scarborough's form language is a peculiar mixture. Andrews's vocabulary is sometimes modern, sometimes Gothic, sometimes Baroque.

The most significant contribution of the architects of the twenties was their realization of the inescapable inference of social values on building form—that the values of a culture are endowed in its architecture. Their desire to find a machine esthetic, as technologically feeble as it

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At left above, sent in the successful collage of the boiler plant, the site plan of the entire Scarborough campus. The first stage is shown in red. Future expansion will include additions in the two pronged wings and creation of two clusters of common-use facilities in the campus foreground.

Figure 3.16. The Architectural Forum Magazine 1966 May p.52-53 US Modernist

> "The final unique quality of the New Campus is that represents (along with some isolated examples of new-town centers in Europe) the first realization of a new architecture. Its implications as an expression of new values and lifestyles override its simple consideration as a single-function building type."

This first paragraph of the third section actually concludes the main concern of this article and also this mapping trials within the relations towards the network of modern architecture. This article is a mapping within its own selected data set (cases and its visual and textual information pieces) and constitutes a network relation.

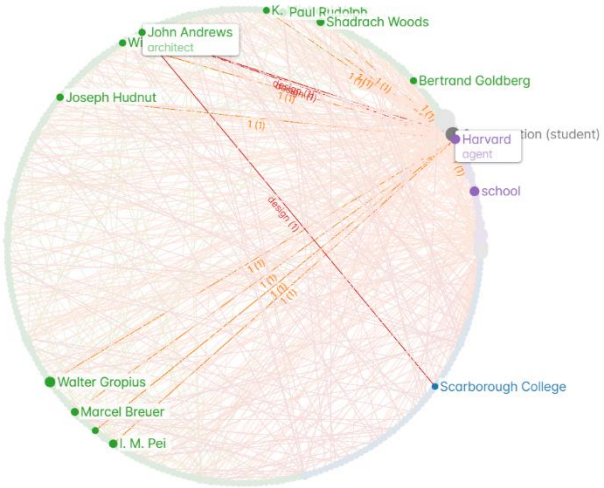

Figure 3.17. The actor cloud mapping circular layout highlighting Scarborough College and its actor-network relationships in GraphCommons prepared by the author in 2022.

While highlighting the Scarborough College as an agent to the greater network relation in the network map of the bulk list content, it reveals John Andrew's architectural education link and the possible influences he had throughout his education and carrier while connecting towards the teachers of network and the teachers also worked on campus architecture which complexifies the pursuit of the architectural information, elements of the campus design.

3.1.3 The Campus Mapping and the Actor of the Visualization

Although, the software use is discarded from the scope of this thesis mapping operation. Considering there are endless possibilities to transform the data into the digital platform starting with the archive software to more online and author based editable ones. One recent technology is found potentially in terms of creative interpretations specifically in the point of the actor projections throughout the visual production, diagram in particular.

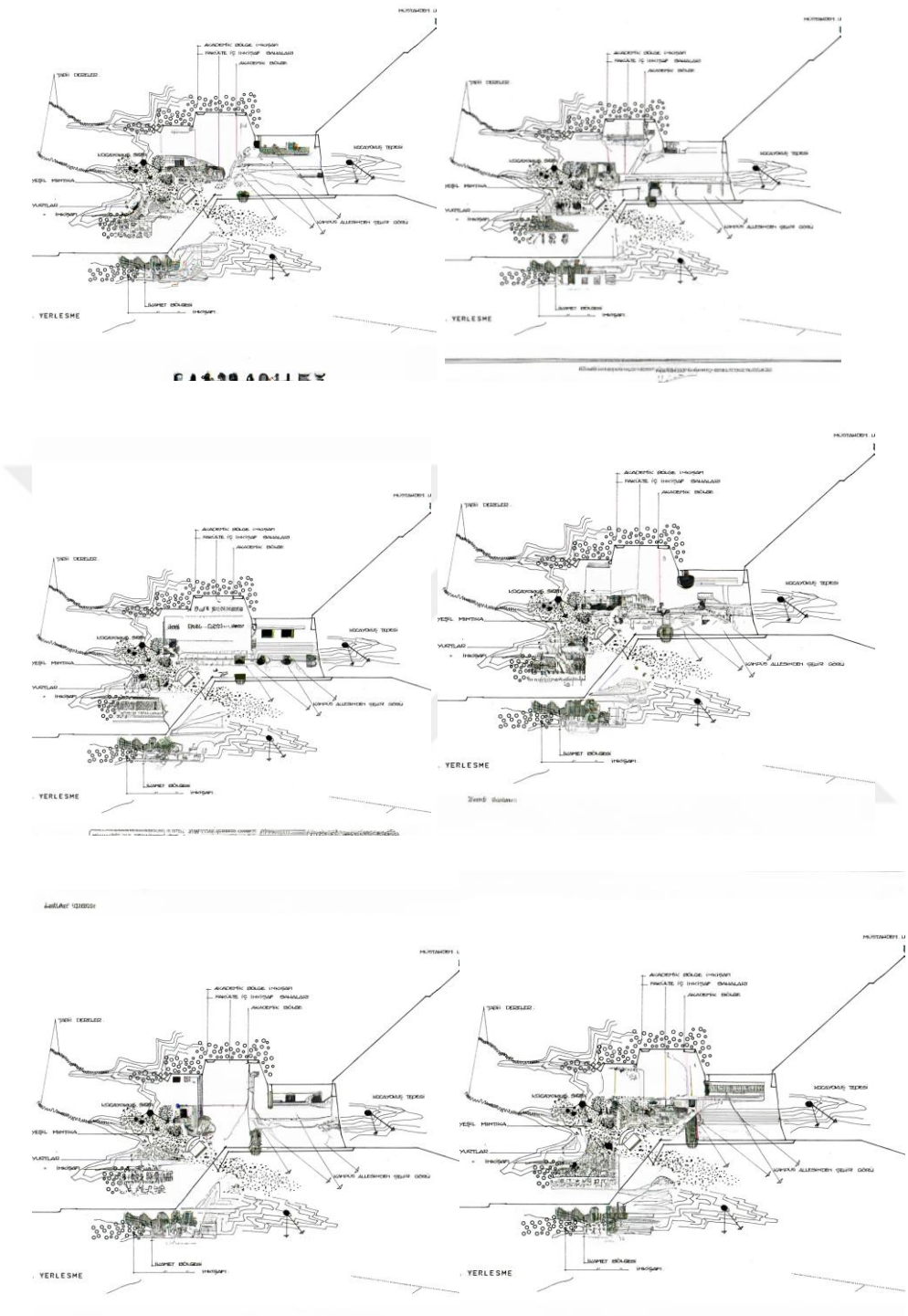

Figure 3.18. The six alterations of the METU Campus diagram by DALL-E in 2022.

This AI-based technology is known as DALL-E. It is an open platform that can generate unique, realistic images and art based on a text description. This type of text description is also known as prompting. It is capable of expanding any image beyond its original canvas again based on text, as well as taking an image and creating variations from it. What’s more, it can make realistic edits to existing images while taking into account shadows, reflections, and textures. Each visual generation results in four visual alternations, demonstrating that Dall-e, as an author, established multiple projections from text to image. The user has a choice between four distinct options. As a result, one visual formation has two author layers.

This feature is tested with two visuals of the METU Campus; one is the definition constructed original diagram, and the second one is the master plan of the campus. These two drawings were chosen for their different levels of abstraction. To begin, the selected image is uploaded to the system, and the selected area is deleted. The textual information entered into the system endeavors to represent the significance of the campus in as brief and comprehensive a manner as possible. For instance, the definition "a pedestrian spine, alley design in a modern campus from the 1960s for recreation of modern society in modern architectural style" is used to regenerate the campus master plan in which the alley part is deleted. Figure depicts the proposed drawings in its interface. The regenerated portion blended in with the rest of the original image. It's intriguing because it can challenge the original, and a first-time viewer of the diagram has a low chance of detecting the original. In this respect, the visual harmony is outstanding. The question, on the other hand, is about the level of projection of textual information. DALL-E acknowledges the visual style and can finalize the image without prompting. What data is entered and processed about a pedestrian spine, alley, or modern architecture cannot be defined and is unlikely to be static.

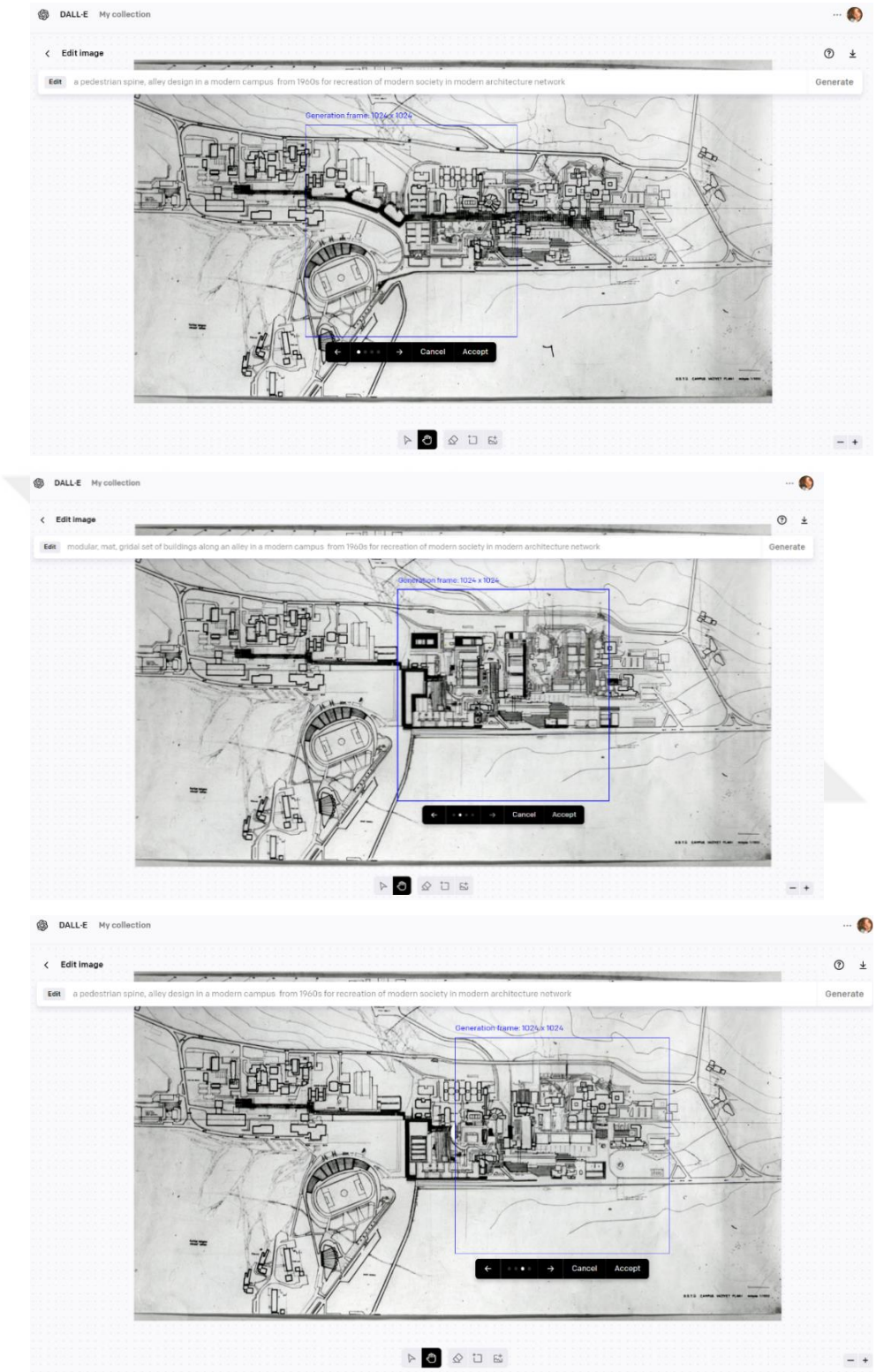

Figure 3.19. The three alterations of the METU Campus master plan by DALL-E in 2022

In the case of the original diagram, after examining all contextual aspects of the land, the architect's authorship becomes apparent, and the AI's compilation of the deleted parts cannot respond to the architect's intention to reflect to the visual ground. In this sense, the uniqueness of the diagram and its abstract machine operations in terms of defining the determinant elements of the campus become accessible in the frame in which all interpretations are consciously delineated and controlled by its architect. The AI alterations add another design layer and create a shift in the actor realization process. In this regard, it could be perceived as an architect in the architectural network, and its authorship may stimulate a discussion about architectural representation. On the other hand, it can be evaluated as these alterations are in continuation in terms of usage of the architectural and design tools which will be discussed broadly in the next chapter. In this regard, the potential of the alterations and manipulations of the AI can be explored for further study in mapping. What if one of the six alterations of the METU Campus diagram is used to employ the definition of the modern campus for this study? What if one of the six alterations was used in the drawing stage of the master plan drawing by Çinici in the 1960s? These questions can be multiplied and creatively interpreted to gain a deeper understanding of the DALL E's operational aspects as a diagram and map creator. In terms of architectural usage, the AI's actor aspects and dialogue with architect can be further investigated.

One last remark about the DALL-E is the re-invention of the remarks of the textual dialogue in the visualization. In the In *The Words Between the Spaces* in 2001, Markus and Cameron argues about the autonomous representation of architecture, in particular spaces, towards buildings: “They are material objects which enclose and organize space. However, buildings often do this (or more exactly, their designers

do it) on the basis of texts which are representations." [75] The importance of textual information, further the operational terms in the design processes can be approached with this understanding. Their perception about buildings unfolds for the design process before construction and also for after the construction. According to them, before they are formed in bricks and mortar, buildings are imagined in words and images. After the realization, the capacity of communication of buildings are still dependent on text on multiple basis. Cameron and Markus state that the reading of buildings they must also be written. Which concludes all attempts of this thesis study along with the textual and visual integration of the architectural information production.

[75] Opt.cit. Crysler. C. G. (2014) p.8 from Markus, T, Cameron, D. 2001. *The Worlds Between the Spaces* (New York and London: Routledge) p.15

CHAPTER 4

MAPPING MODERN CAMPUSES

"Buildings and urban space are often considered to be outside representation, their meanings discovered, rather than produced by the critic. Writing about architecture, particularly in the high modernist tradition, has typically assumed that buildings transmit meaning autonomously to the receiving observer: texts ponder and reflect upon these meanings, but are not their sources. Authors such as Foucault and White question this position: their arguments suggest that our understanding of buildings, like our understanding of other aspects of the world also passes through representation, for which there is no prior, pre-linguistic moment." (Crysler, 2014, p.8) [76]

4.1 Architectural Visualization as a Mapping Operation

"The power to create images would be a good partial definition of architecture's competence, if the performance of that power is understood to be a disclosure of truths about the world by giving appearance to them. This disclosure should not be understood in a straightforward representational sense, even less so in a propositional one."

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[76] In the past for Texts and Buildings. The relationship between words and buildings has been discussed throughout journals. Crysler, C. G. (2014). *Writing spaces discourses of architecture, urbanism and the built environment, 1960-2000*. Taylor and Francis. p.8

Before putting visuals into categories in modes of representation how Micheal Hays defines the dialogue of architecture, and the architectural image is critically important. In the article titled, *Architecture's Appearance and The Practices of Imagination*, he puts that architecture has the power of creating any kind of architectural visualization as a complementary operation from which architecture cannot be set apart. A visual can vary a plan, section, axonometric drawing, details drawing, diagram, sketch, or a map but each one has its own information process, interpretation, and reduction frame. Still, the power of visuals to present architecture can be understood with Hays' words.

These words can be interpreted as architectural images are responsible for framing truths as a conclusion of its architectural information sphere. This act is not limited to forming an appearance, but it is complementary to the production of architecture with linked processes. In that sense, it is a reciprocal production chain. The first one is the process of a specific set of information towards knowledge and the second one is a projection of this knowledge by using visual tools. This projection can be considered with reference to Robin Evans' "architectural projection" which is explored in the previous parts. This act is open to interpretation in both stages. Information that is processed may not be architectural but, in the meantime, knowledge is transformed to become architectural either in the process from information to knowledge or in the visualization. These processes are the responsibility of the architect. The production of architectural knowledge beyond its technical information, is bounded by its author whereas the production of architectural images and selection of visualization tools and mediums are shaped by its author depending on its audience. This process is interconnected to the actor-network relation of its context and further double-sided projection term of this study.

In a sense, this act is similar to 'mapping' which is inevitably more than just 'tracing'. 'Tracing' calling Corner's word with respect to Deleuze and Guattari (1987) that is delineating patterns but revealing nothing new. Deleuze and Guattari draw a line between 'map' and 'tracing'. This distinction leads to the definition of 'maps' are connecting with the keywords like open, connectable, and 'experimentations with

the real'. These keywords outline parallel to M. Hays' approaches and lead to a process for the disclosure of truths. On the other hand, it is important to understand what Robin Evans limits in architectural projection terms which differentiate modes of representations. In that sense, it is similar to mapping and tracing any differentiation.

4.1.1 Projection as a Mapping Operation

Robin Evans in "Architectural Projection" starts to examine what is projection with "Architectural drawings are projection." He defines the operation as part of the things that are the things itself. Projections in the drawing are addressed in the medium of representation step by step under a logical organization. His first example is images on a tv screen. He tries to demonstrate a projection process from a basic example. According to this example, projected visuals are not open to any interpretation. In that sense, projections are directional and limited to the medium or machine, instrument even to interface that embodies the projection process. In architectural practice, he sees that projections transform three-dimensional information to two-dimensional since flattened information is way easier to view and study. In practice, this projection operates inversely, and a flat representation becomes a three-dimensional object in the construction process on the site. In that sense, it can be evaluated as an open-work calling Umberto Eco's approach towards art. From the example of the images on a tv screen, the actor behind the camera has projects his authorship layer with his/her gaze by selecting the one scene visible while keeping others in the dark. Similarly, architectural projection becomes problematic bearing in mind the motivation of representing truth. Although all drawing sets are available and compatible, still from a drawing to architecture is shaped by the architect and can be altered in the construction site in various situations. Since architectural drawing as a set of projections cannot be considered as an absolute record before an architectural object is built.

Drawings in the design stage are projections of possible realities. Even a specific drawing is oriented to read the designed object under the guidance of architectural tools. The reading practices of a drawing is a mental process towards a three-dimensional dream. It is inevitable explored in architects' minds with their visions. A drawing is "a projection of plausible outcomes and instructions and proposals". In that sense, Evans finds the projection term is in unclear status since there is no projected object in the design phase of architecture. Material choices, the construction and usage practices of the material can be changed, interpreted and re-invented. In the time of the drawing realized, the architects as an actor could not be perceive these potential situations.

Voorhees, J. (2013) in "*The Projective Credibility of Fictions: Robin Evans' Methodological Excursions"* as

> "Projection, as an operation, is readily tied to forms of architectural thought and production by way of representation. Orthographic and perspectival projections establish potential relationships between what is drawn on a page (as a representation) and what happens in the world (as a consequence). Evans uses the projective to describe this as an operation, as a form of speculation rather than a form of documentation."

On the other hand, there is an idea described with architectural codes that become a projected image. For Evans, projections and architectural drawings are placed between the beginning and the end of an architectural design process. Also, in general, projection is considered as fixing a state that is directed with invisible lines from its source, but still "projected image can be mobilized by the imagination of the observer." p.19 He gives the example of a workman looks at a workshop drawing. Workman as an actor and his imagination and experiences with material, its availability and capacity of craftsmanship creates a unique statement on the built process of this projected information in the drawing. Thus, the drawing and the built object are altered and every time, one evaluates the drawing and the object since the object starts to communicate with its context. These alterations will multiply and

reconnect with each other throughout time with its reader's unique perception. In that sense drawing and its object as a couple composes its own reality. In each act of reading, projections lead to binary oppositions. Since "Whether in the order of spoken or written discourse, no element can function as a sign without referring to another element which itself is not simply present" (Derrida, 26).

Moreover, for this chapter and the sake of the research process of this thesis, modes of architectural representation and images are narrowed down to a specific one, diagram. Why diagram is differentiated from other types of visuals, representation techniques and selected for this thesis study can be explained with following references.

4.1.2 Diagram as a projection, a representation, and the architectural mapping operation

First of all, Zdebik in his book's introduction "What is a diagram?" chapter introduces the fundamental definitions of a diagram. The first impression of a diagram is about conveying information about something incorporeal. In Greek origin, *diagramma* means to mark by lines. It is composed of two words *dia* and *graphein*, where *dia* is through, across, apart and *graphein* is to write. Diagram engages with illustration to unfold its statement, idea, and theorem via geometrical figures. Illustration tries to explain a thing by outlining its parts and their relationships.[77] The final visual outcome of a diagram can be formed and named as a sketch, a drawing, a plan, a chart, a graph, or a map. Zdebik states that what matters the form of a diagram is embodied as a representation, a diagram is a configuration

[77] Zdebik, J. (2014). Deleuze and the diagram: Aesthetic Threads in visual organization. Bloomsbury Academic. p.1

of lines, whether they are drawn or written. So, in each diagram, a line has its own internal meaning that operates for the total message of the diagram. With this meaning, each timeline as a graphic illustration inherits a different meaning; a general meaning as an abstraction tool and a meaning coming from the abstracted subject or object.

> "In a conceptual diagram, lines marking out space are abstract traits. The diagram thus does not represent, but rather maps out possibilities prior to their appearance, their representation."

According to words of Zdebik, what diagram maps out as possibilities also becomes projections for its own unique data set and knowledge network. Even it may include references from other disciplines. For example, the line can represent a wall in an architectural plan drawing as well as the same line represents a section line in that plan which corresponds to another drawing information. Also, in directional projection from a three-dimensional object to two-dimensional interface, that line recognizes an architectural part on a paper ground while differentiation of other architectural parts needs more elaboration of the line tool. This complexity that is required can be exampled from numerous studies in architecture. For Zdebik as well, architecture and cartography are fundamental to the conceptualization of a diagram.

After the fundamental definition of the 'diagram', it is important to discuss how 'diagram' has elaborated through the modern architecture period. Foucault and Deleuze have many interpretations that are hand in hand with architecture and theory. The diagram definition in Deleuze's *Foucault* directs to operational potential to show any projection between the content of a diagram and the diagram itself. Definition of Deleuze outlines two edges of a diagram. The first one is an elaboration of a diagram as a new informal dimension and the second one is the concept of a diagram as a display of relations as pure functions. The first one can be interpreted as a diagram becoming an interface that does not have to be a formal projection operation like Evans defines. It is informal within the agenda of abstraction operations go through. In other words, a 'diagram' is the exposition of an

organizational system within a level of abstraction from function to device itself. The second one is the displacement of pure functions that cannot be represented as the pure functions they are. Deleuze states: ‘A diagram is a map, or rather several superimposed maps. And from one diagram to the next, new maps are drawn.’[78]

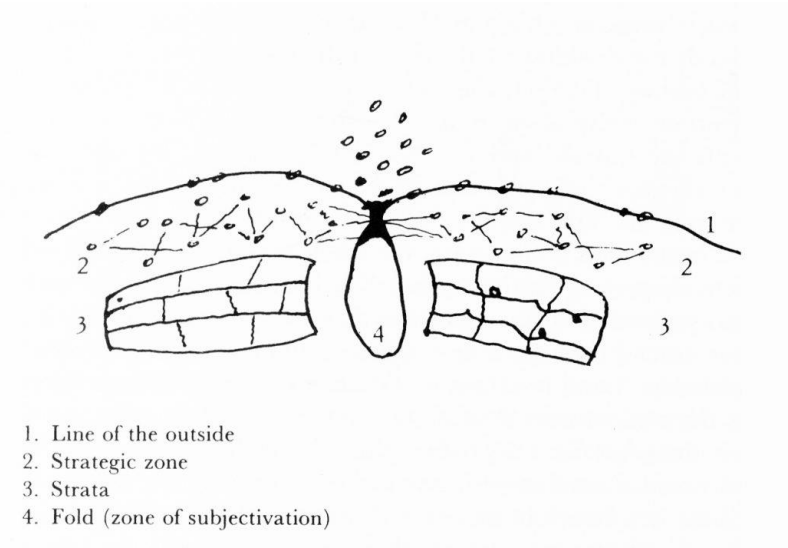

Figure 4.1. Fold diagram by Gilles Deleuze, in “Foucault” (1986)

Deleuze’s Fold diagram is represented in figure 4.1 which revisits the urban void with reference to architectural theory and tries to figure out a new urban strategy throughout the city and productive structures. Considering Deleuze’s definition of diagram unfolds as an operation embodied from a map. This can be considered as a potential for diagrams. In an architectural production context, diagram of a project in the design phase composes a set of projections that are operated with all information pieces coming from all actants in its assemblage and ordered by its author to set a specific dialogue between the outcome and its audience. Furthermore, diagram does not just operate its assemblage but grasp a meaning about its architecture and interconnected architectural network and further provides a rereading about its assemblage. Hays’ approach examines this operation with

[78] Deleuze, Foucault, 44

following words: “The schematic imagination is an imposition of order on a stratum of sensible and conceptual knowledge that has no exterior, on an assemblage that is autonomous and closed.” Hays continues to explain how a diagram operates and finalizes an idea or statement.

> “If the schema is a template, the diagram is a frame and a connector. The diagrammatic imagination comprises functions that trace and map a region captured from a larger field, thereby also creating an outside.”

Moreover, S.Allen in Diagram Matters starts the article with this sentence from *A Thousand Plateaus*: “An abstract machine in itself is not physical or corporeal, any more than it is semiotic; it is diagramIic... It operates by matter, not by substance; by function to represent, even something real, but rather constructs a real that is yet to come, a new type of reality.” (Deleuze and Guattari (141-142) This reference shows that the diagram is operational, and it is active in terms of producing an outcome. The process of architectural information is linked with the intended function of the diagram, which is designed by its author, the architect. It is open to producing knowledge by providing new interconnections and reinterpretations for further architectural reading. So, Deleuze and Guattari seem to underline that a diagram of an architectural project may contain more information than the project or may reveal more links than the project itself. Vice versa, it may be more closed for any reading and seem to be reduced in terms of abstraction. Even this reduction gives a projection about the author’s tendency towards architecture. Allen mentions that “A diagram is a graphic assemblage that specifies relationships between activity and form organizing the structure and distribution of functions.” Similarly, Samol defines the diagram as an attempt to relate an idea of architecture interiority as it could be marked in the actual project. He uses the term architectural interiority with reference

to volumetric organizations.[79] These references are further in relation with tectonic, structure, figure-ground. One parallel approach is defined by Colin Rowe by defining diagram as “paradigm” and “program”. While paradigm indicates the embrace of a priori ideals, program is the empirical solicitation of fact.[80]

Among architectural representations, orthographic sets, sketches, and models why diagram has advantages to be operational beyond its representational quality can be explained under reasons. Firstly, the diagram’s content can offer more potential interconnection than the plan or sectional setup since diagram is always an embodiment of multi-layered content and also, architectural drawings limit the content with technical information and tools. Still, these mentioned representations can be evaluated and interpreted as diagrams.

Each abstraction in diagram production is a layer that is not limited to the reduction of information even if it seems so. Thus, starting from the abstraction operation, the mode of abstraction or representation of the content in a diagram triggers an ability to set interconnections in-between actors, networks, and information. These interconnections can project as a planar representation as well as contains three-dimensional information. Besides, the order of a diagram is bounded by the imagination of its author. There is no limitation or representational rule for the type of expression. The variety of representational techniques for content and freedom for the level of abstraction creates a shift in diagram construction. Each interpretation for abstraction enables us to evaluate diagram as a design product. In this regard, Reyner Banham states that diagram has a such merit that it becomes the socialized medium of the architecture professions. Since architects are not able to think without

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[79] Somol, R. 1999. Dummy Text, or The Diagrammatic Basis of Contemporary Architecture. In *Peter Eisenman: Diagram diaries*. essay, Thames & Hudson.

[80] Rowe, C.1996. “Program versus Paradigm: Otherwise Casual Notes on the Pragmatic, the Typical, and the Possible,” in As I Was Saying, vol. 2.Cambridge: MIT Press, p. 10

drawing and diagram is in between any drawing and writing act. It is operational between form and word.[81]

Samol discusses the diagram as in the center of a rising attention after 1960, since it becomes a polemical device than the drawing (*disegno)*, "accompanies a breakdown of the post-Renaissance consensus on the role of the architect and achieve its apotheosis with the emergence of the "information architects". (p.8) While Samol evaluates Eisenman book and his approach to diagram in the introduction chapter of the book, he states that diagram was not always constitutive of architecture, as a form it has become to "actualized" in a sense matter of architecture. Because there are series of exploration on form, language and representation and it is hand in hand with program, force, and performance aspects of the project. To design in consideration of all, diagram "emerged as the final tool, in both its millennial and desperate guises, for architectural production and discourse."[82]

He further elaborated the evolution of the diagram definition for architecture and diagrammatic practice with reference to many modern, avant-garde architects and philosophers Chomsky, Deleuze, Robert Venturi, Rem Koolhaas, Yve-Alain Bois, El Lissitzky, Colin Rowe, Le Corbusier, Christopher Alexander, Reyner Banham, Rudolf Wittkower… The discussion of diagram is started to link the terms and operations like layer, structure, fold, transparency, projection, virtual, function. In the conclusion part, Samol's definition on a diagrammatic practice is critically comprehensive and represents the notion of this study.

> "A diagrammatic practice (flowing around obstacles yet resisting nothing) - as opposed to the tectonic vision of architecture as the legible sign of

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[81] Banham,R. 1996. "A Black Box," in A Critic Writes Berkeley: University of California Press, p. 298.

[82] Op. cit. Somol, R. 1999

> construction (which is intended to resist its potential status as either commodity or cultural speculation) - multiplies signifying processes (technological as well as linguistic) within a plenum of matter, recognizing signs as complicit in the construction of specific social machines."

The actor position of the architects in this diagram construction unfolds elegantly in the following sentences of the definition. The references towards the intangible contextuality which is critical to represent and project the operational aspects in the project to the diagram is clearly discussed.

> "The role of the architect in this model is dissipated, as he or she becomes an organizer and channeler of information, since rather than being limited to the decidedly –vertical - the control and resistance of gravity, a calculation of statics and load "forces" emerge as horizontal and nonspecific (economic, political, cultural, local, and global). And it is by means of the diagram that these new matters and activities - along with their diverse ecologies and multiplicities - can be made visible and related."

In conclusion, diagram is a significant model to study for this thesis. Because diagram is firstly a representation of its architectural project, object, or entity. Then it constitutes a set of projections that are superimposed in the moment of representation and reading. As an object, it is in harmony with 'projections' understanding while operating the assemblage as an abstract machine. Diagram as a tool for dialogue between architects and the architectural audiences is used by many architects in modern architecture period. S.Allen sates "... diagrams are architecture's best means to engage the complexity of the real."

4.2 Diagrams of Campuses

In this section, the main concern is to explore diagrams and their representations of architectural information towards an understanding and tracing of actor, agent relations and projections in-between. In this regard, by using diagram, and

diagrammatic abstraction tools in visual representations in drawings, information sphere of campus creates a 'plane of consistency' calling Corner's words. In the scope of this thesis study, campus diagrams are investigated to realize the potential of diagram in theory. First of all, a campus project designates an urban model. Urban models of the time have immense complexity. This complexity arises firstly because of scale, and functional inclusivity. Then further complexity is embodied because of dealing with future adaptation. Diagram as a tool can summarize the challenges, potentials, and problems for specific urban cases. Each diagram of a university campus case is significantly different from each other to underline core ideas.

> "When one looks at resultant forms, they no longer appear to be motivated by site, function, program, interiority, or anteriority. Rather they appear to be "out of focus," blurred by the superposition of the texts of function and site with other texts. It is difficult to tell if the resultant forms come about through functional requirements or from a desire to produce meaning; neither seem to explain them. This produces what will be called a diagram, a blurred condition between form and content, between site and program, where signs no longer read as fully motivated." [83](Eisenman, 2007)

[83] Eisenman,P (2007), *Written into the Void: Selected Writings,* 1990-2004. New Haven: Yale University Press, p.112.

Figure 4.2. Competition design diagram of The Free University Berlin by Candilis-Josic-Woods, Source: Karl Keim "The Free University Berlin (1967-73) Campus design, Team X Ideals and Tectonic Invention." p. 188

The competition design diagram from Candilis-Josic-Woods is one of the iconic examples. This diagram constitutes six different planimetric views. It is shown in deconstructive [84] manner. Each visual as a drawing is a design layer of the project. The built form, circulation, vertical composition, and even shadow as layers comprise a unique system. Each layer signifies an urban tool and clarifies the importance of these selected urban tools in the urban organization in its context. The juxtaposition of all layers as an urban plan is represented at the right bottom to show the final output of the design within the impact sphere of all layers. The planimetric views and juxtaposed representation reveals a three-dimensional organization for its audience.

[84] The term is used with respect to Jacques Derrida's theory of "Deconstruction" and Peter Eisenman's deconstructivist approach to the theory of "Conceptual Architecture".

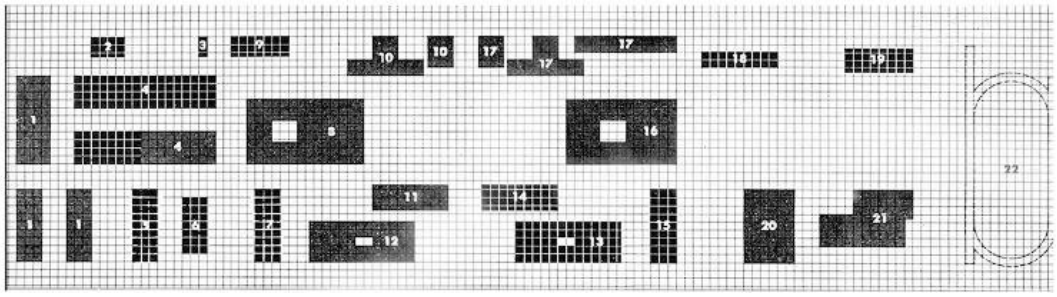

Figure 4.3. ITT (Illinois Institute of Technology) Chicago plan scheme drawing, 1942 by Mies van der Rohe. Source: MoMA Mies van der Rohe archives

Another significant example can be Illinois Institute of Technology in Chicago by Mies van der Rohe. The diagram has two representational elements in terms of figure-ground relation leads the reading throughout these two elements. The first one is the grid and the second one is the representation of buildings as black rectangles. What can be interpreted at first is that the diagram introduces a grid layout in a specific dimension which can be inherited from its urban context is the regulatory element in an outer sphere of the diagram? In the meantime, the focus of the diagram is limited to the project area and neglects the surroundings. There is no relationship established with its surroundings, but it is questionable in terms of the grid scale is the main continuity. On the other hand, it can be interpreted that the author of this diagram or the designer of this project has no concern about continuity in the urban fabric. This neglection is a representation of traditional break. To clarify the approach, there should be information about its architect and his style along with the reading process of the diagram. Thus, there should be textual information linked hand in hand with this diagram that triggers the network for further reading. Moreover, it is readable that the grid is leading the dimensions of buildings and finding a balance between mass and void composition. In the center of the drawing, there is a central open area which encompasses the core of the university. This area is defined with a symmetrical organization. The left and right edges of the core zone seem to have different functional agendas considering the change in mass density. The right part with a sport function indicated with linear figure encloses another open area. The similarity in dimension of open spaces in the core and the right part causes

a hierarchical duality. The figure ground relationship gives an invisible reference of three stripes divided into two linear void organization.

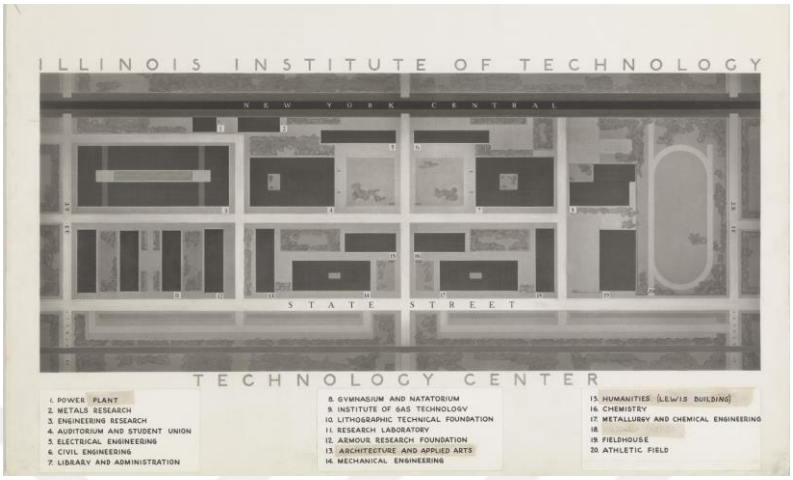

Figure 4.4. ITT (Illinois Institute of Technology) Chicago master plan, 1942 by Mies van der Rohe. Source: MoMA Mies van der Rohe archives

There are two different master plans studied as drawings of ITT campus by Mies van der Rohe. The second master plan used as a final version which shows that the design is elaborated with relation to the site and its vehicle accessibility. (Figure 4.4) The grid resolved in the real environment condition. This second master plan can be evaluated as a new layer to existing design ideas as well as the total reconstruction of the design. The roads become an organization element, the locations and form of buildings are revised accordingly. The three roads seem to have a reference to the stripe's organization of the previous diagram. This stage also changes the regulation of open spaces and creates different arrangements. While a central open space with a symmetrical organization in the core of the university is in continuation, the sport function with an open space remains as the open area of the right part. Comparative reading of these two is diagrammatically operational to explore design phase with the influential assemblage's entities.

Another example can be Tougaloo College diagrams. Tougaloo College diagrams are published in Architectural Forum Magazine in 1966, issue number 4 in the "How to Grow a Campus" article. There are two diagrams available and discussed to

understand the main theme of the campus and design principles along with the embodied theme. (Figure 4.5)

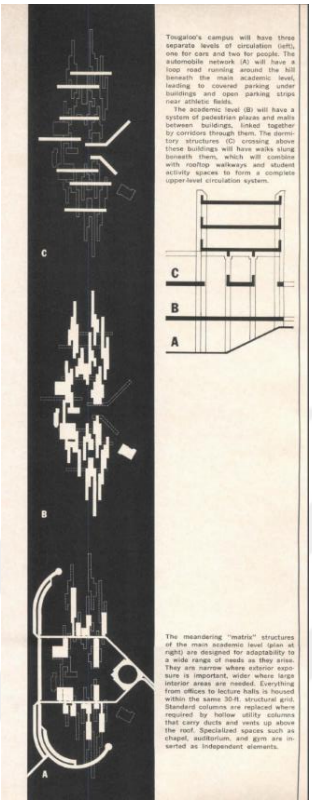

Figure 4.5. Tougaloo College diagram in Architectural Forum Magazine in 1966 April p58. US Modernist archives

Firstly, the text underlines that the design focuses on an open-ended plan. The first diagram of the campus is set with “A multilayered network, free of the ground” words. These words explain this diagram set circulation layout in three levels. The circulation system also defines the spaces by showing the mass layout in three pieces. The complementary visual of the diagram is a section that transforms the mass layout into a volumetric understanding. Even, functional zoning of this campus as vehicle ground, academic level, and dormitory level is unfolded with this section. The three-dimensional aspects of the campus are represented according to diagram tries form-finding logic. It starts with the first buildings as elements that set integration with topography lines. These two buildings provide an entrance to the complex. The

second stage can be interpreted as the development of the first stage. The third and fourth steps show modular progress and three-dimensionality. These stages assemble a mat-building organization. The final model is seen in figure 4.6 that reveals a broad image. It contains a finished structure even if it seems to open continuation. It surrounds a main open space in a balance with vertical and horizontal masses.

Figure 4.6 Tougaloo College diagram in Architectural Forum Magazine in 1966 April p58. US Modernist archives

> "A focus on open spaces the two overlapping systems of academic and residential structures form a framework for a system of small open spaces around a central plaza that is the core of the campus and contains its only freestanding, sculptural building, the chapel. The intention to create significant open spaces within a neutral matrix of buildings is clearly stated at the main entrance to the new campus, where two arms of small-scaled, repetitive dormitory structure define a vast funnel-shaped space leading into the core of the campus."

By giving Tougaloo College example from 1965, by Gunnar Brikets and Associates design, the usage of detached levels for pedestrians, and vehicles in a sense creating a circulation matrix is a shift in design approach for the time. This approach is tried in different spectrums. Like Frei University of Berlin is a mat building with detached,

flying corridors used in a high dense. Whereas many bridge kinds of semidetached vehicle and pedestrian organizations can be easily readable from the Bauhaus Dessau example. In the Tougaloo example, landscape grid integration, and 3D matrix carries similar references. Ring circulation is transformed with combination of the elements of mat structure.

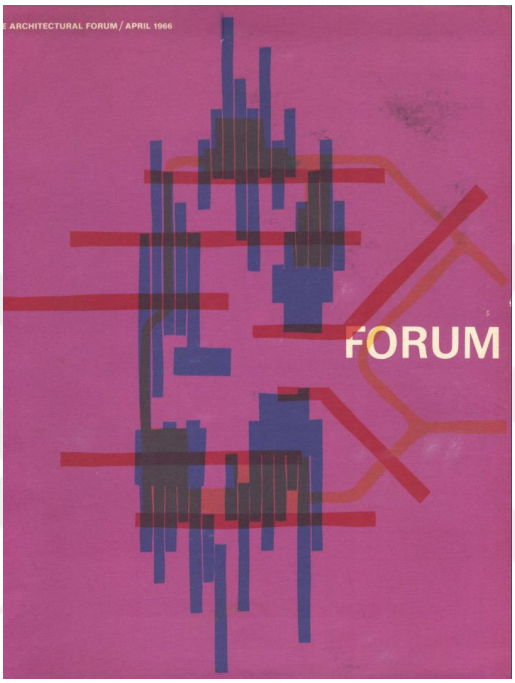

Figure 4.7. Architectural Forum Magazine cover in 1966 April p58. US Modernist archives

The final diagram image (figure 4.7) of the case is the cover page of Architectural Magazine which is designed by Peter Bradford based on the plan for Tougaloo College, p. 57. This diagram is firstly an abstraction of what is shown in the model. The designer detaches the structure from its physical context. On the other hand, he set colors according to the first diagram's level differentiation. This juxtaposition of levels with different colors' interpretations introduces different meanings to the part of structures. However, the critical point is that this colored diagram shows a different meaning than former ones. This diagram's actor-network relation is not limited to its project. Since it becomes a representational image of the article. It starts to set a dialogue between Tougaloo College and other campus projects of the time.

It is even the cover image of the magazine that is embodied for the issue which shows a focus on architectural bodies and stress to spread. In some way, it is a declaration of how campus projects have importance among other architectural issues.

4.2.1 Re-mapping of the METU Campus Diagram

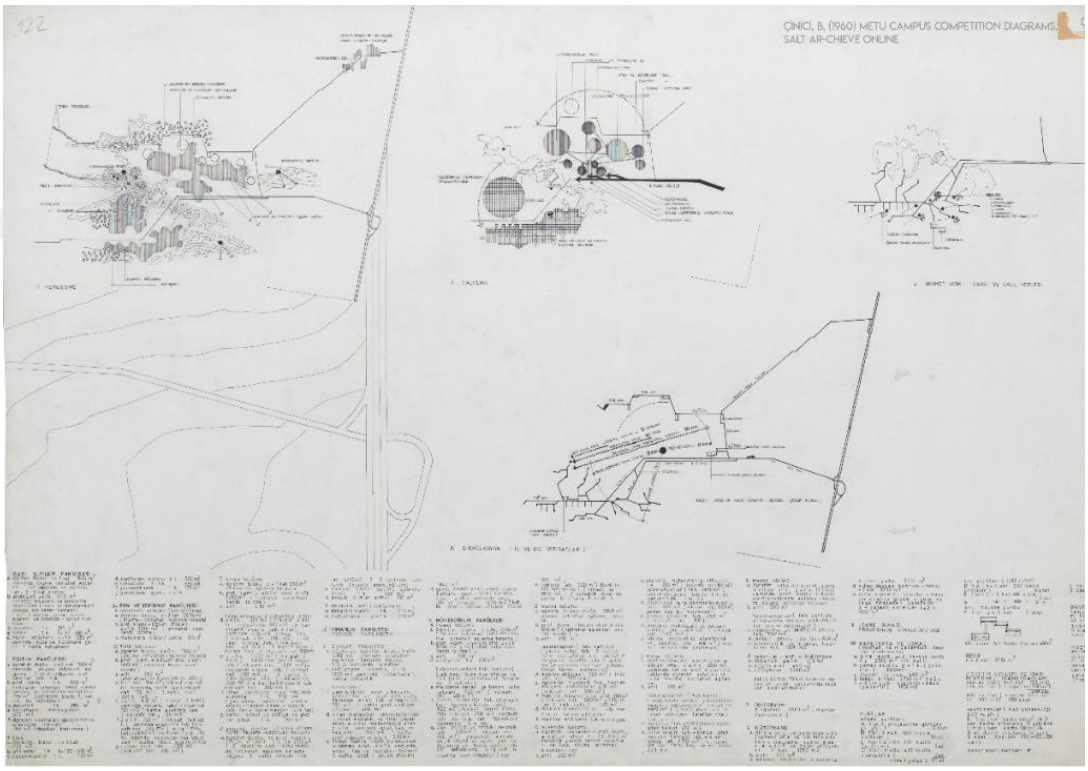

Figure 4.8. METU Campus Competition Diagrams 1960 by Çinici Architects
Source: Salt Archive

> "In the late 1950s, the project was anticipated to become a model for urban planning throughout the Middle East and today it remains as one of the most outstanding icons of modern architecture in the world."[85]

[85] Savaş,A. (2018) "METU Campus," *Brownbook Magazine*, pp 71–85

Since the METU Campus diagrams and their level of complexity responds to the theoretical understanding of the diagrams discussed above. The unique design of the METU Campus reveals a significant potential for projections toward modern architecture at first glance. There are multiple diagrams Çinici's provides to show the narration of the METU Campus. Figure 4.8 composes four sets of visual diagrams with textual details for the competition. It is a poster of the competition project. The first one, which will be called the METU Campus diagram from now on, is chosen as the primary focus. The others will be elaborated as secondary and complementary diagrams for the definition.

Beyond the diagram drawings, Çinicis architectural approach and the representation the approach can be traced in the master plan, building and detail drawings as well. Their diagrammatic tools within the continuation of architectural production can be read from their other architectural works.

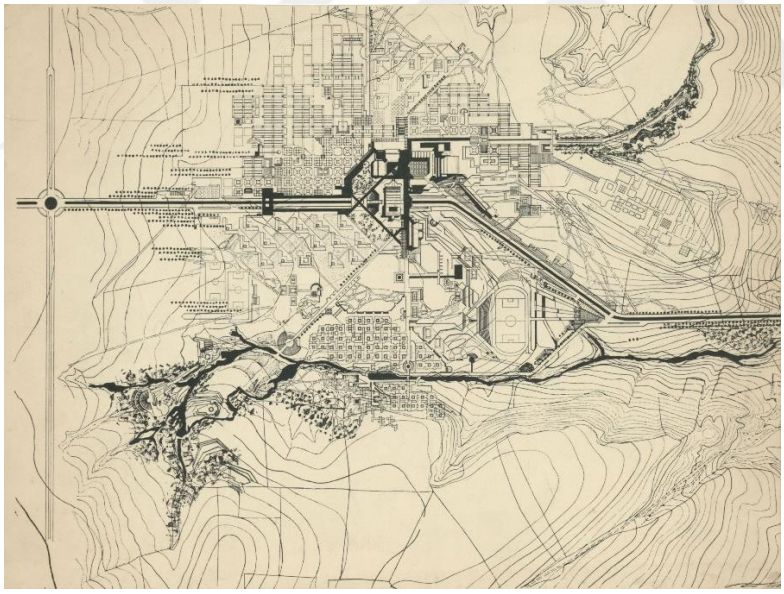

Figure 4.9. Master Plan Drawing of Diyarbakır University by Çinici Architects in 1970 Source: Salt Archive

For example, the master plan drawing of Diyarbakır University in the competition entry, in 1970 has a similar emphasis in the line techniques. Its graphic quality seems almost diagrammatic and resolves between the landscape and settlement areas.

According to the Salt Archives, the scale wise smaller version of the master plan drawing was produced to highlight specific programmatic aspects which became a diagrammatic representation. This smaller diagrammatic version highlights social-cultural structures and recreational areas; common functions; faculties; laboratories; zonings between educational and residential; green system; pedestrian circulation; vehicle circulation. In this layered organization gives a reference how METU campus diagram can be constructed and unfolded. Which are the programmatic and structural elements that articulate the land entangled with the competition brief and architectural sphere of the time. The emphasis on the main entrance axis and grid organization in modular manner can be named two aspects which are readable from first glance.

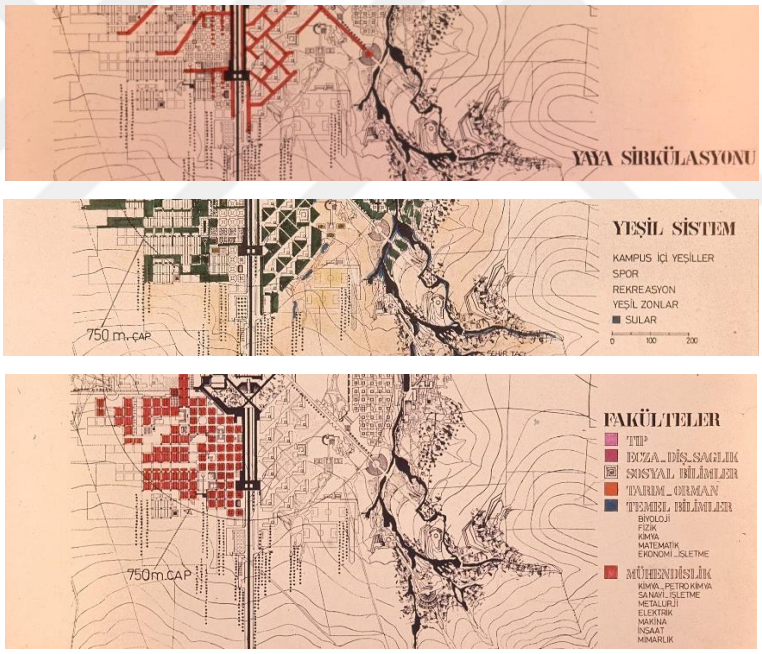

Figure 4.10. Diagrammatic parts the set of drawings for Diyarbakır University by Çinici Architects in 1970 Source: Salt Archive

The deconstruction of the diagram reveals theoretical and architectural layers that can be a tool to understand and visualize the actor network relations in architectural manner. These layers are the superimposition of the elaboration of the assemblages'

pieces to turn into a design strategy, a tool, or a meaning. Reading and interpreting those layers also link interrelations between layers and further architectural networks. In that sense, the elements of this definition; layers and connections will provide a mapping ground for a parallel reading ground. Therefore, this operation can be considered as a re-mapping. Because these layers and connections can operate as actants and become critical to establish the network's links and nodes. This re-mapping as an architectural documentation procedure uses the term 'projection' in its broadest sense to refer to the previous discussions in this thesis. Thus, by using architectural reading tools with the projection, this intangible information of history and culture composes and documents a specific network in modern campus in the frame of '*International Style'* as a style[86] internationally interwoven within the time.

Furthermore, this re-mapping procedure tries to reveal projections starting between layers, then to drawings, and at the end to architectural approaches. In other words, it is a trial to set the dialogue between layers of diagrams and drawings, and the tropes of modernism[87] on the urban scale. This process is an intricate and speculative process itself to claim a reading from the diagram to the building, and from the one campus example to the modern campus idea as a whole. In a sense, the diagram projects itself to the reality of METU Campus, as "an ideal and total university environment"[88].

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[86] "By style is meant the constant form--and sometimes the constant elements, qualities, and expression-- in the art of an individual or a group. The term is also applied to the whole activity of an individual or society, as in speaking of a 'lifestyle' or the 'style of a civilization.'" Schapiro, M. (1953) Style.

[87] formal tropes, stylistic tropes using words from
Goldhagen, S. (2005). Something to Talk about: Modernism, Discourse, Style. Journal of the Society of Architectural Historians, 64(2), 144-167. doi:10.2307/25068142

[88] Sargın, G.A., and Savaş, A. (2013). 'A University is a society': an environmental history of the METU 'campus', The Journal of Architecture, 18:1, pp. 79-106, DOI:10.1080/13602365.2012.751806
For further discussion, please refer to S. Muthesius, The Post-War University: Utopianist Campus and College, Paul Mellon Center BA (Yale, Yale University Press, 2001)

Also, the focus which is called The METU Campus diagram is a conceptual diagram[89] named as "settlement". The first thing about the diagram should be known as historical projections; some programmatic premises about the design of the METU Campus are already led by a design brief. "*'Care and sensitivity were required in paying respect to the site',* and *'symmetrical plans or over-rigidly imposed style is undesirable'.*" To what extent the author of the ideas purely belongs to Çinicis, what extent they interpreted to already given programmatic premises can be understood through this way. From the first glance of the diagram, the fulfillment of the requirement is visible.

The other actors of the campus before the design stage and design briefs should be reviewed to understand the involved architectural network towards the vision of the university in architectural sense. The realization of the campus is critically bounded with this architectural and social agenda of the founders. According to the historical background information in the Getty report. G. Holmes Perkins, who was the head of the Department of Architecture at the University of Pennsylvania, was invited to supervise the structural organization of the school, its program and its academic mission. Later, Leon Loschetter and Willhelm von Molke joined the team to assist and prepare the plans of the campus. Thomas B.A. Godfrey and Marvin Sevely who were two experts from the Fine Arts Department of the same university participated for teaching and administrative positions. Godfrey who was a young and talented architect at the time became the founding dean at the new university (p.28-29)

> "Between 1955 and 1960, Dean G. Holmes Perkins and Thomas B. A. Godfrey presented a series of reports and projects to the Board of Trustees related to the campus plan of the university. The report, dated December 1959, summarized all of the initial principles developed for the design of the

[89] "It is a display of relations as pure functions" definition of a diagram from Zdebik, J. (2014). Deleuze and the Diagram: Aesthetic threads in visual organization. London: Bloomsbury Academic.

campus. [90] Even after leaving Turkey, Perkins remained as the main advisor of the campus development plan, which reflected his perception of "*high modern architecture and urban planning strategies.'*"" p.29

Why the representation of the settlement idea in the diagram is so much important can be understood through the competition reports from the 1960s "… 'the site decisions' were regarded as essential for the creation of the desired community, and both landscaping and architecture were of significance in that regard." Thus, from the projected knowledge of stylistic interpretation and historical documents' references, there is a route to urban society practices. These practices were already grounded within the minister of education, later with the deans and their reports. Although Çinici's competition drawing is dated to 1960, the initial ideas and the social framework of the institution started to work on the design in 1958. Even the projections of the design can be traced through new developing Turkish Universities at the time the Ege (Aegean) and Karadeniz (Black Sea) Universities in 1950. Relatively, the legal agreement between the United Nations and Turkish Government and the following process on the research of city planning in Turkey has a great influence with the establishment of the METU. Charles Abrams, who was from University of Pennsylvania, City Planning Department and was a teacher at MIT, initiated the establishment of an institute of high academic and environmental standards after his reports about the Turkey in 1953. Savaş and Sargın states that even that time the references of the American and British Universities are there to define the framework of the ideal institution "not unlike the best of the American and British Technical Universities".[91]

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[90] Report to the Board of Trustees on the Campus Plan for METU, December, 1959, approved by the Trustees in January, 1960, METU Archive.
[91] As cited in Güven Arif Sargın and Ayşen Savaş, "A University Is a Society: An Environmental History of the METU Campus," The Journal of Architecture vol.18, no.1 (February 2013): 79–106.

With this understanding, all lines, hatches, and dots represent an urban stylistic choice of the architect which is blended with the design brief, and deepened all social, political, and related entanglements. Its theoretical and socio-temporal (and it can even be said that ideological) background serves for the production of the institutional community. Campus with its life and its architecture, is already there in the diagram, is the diagram, and the object.

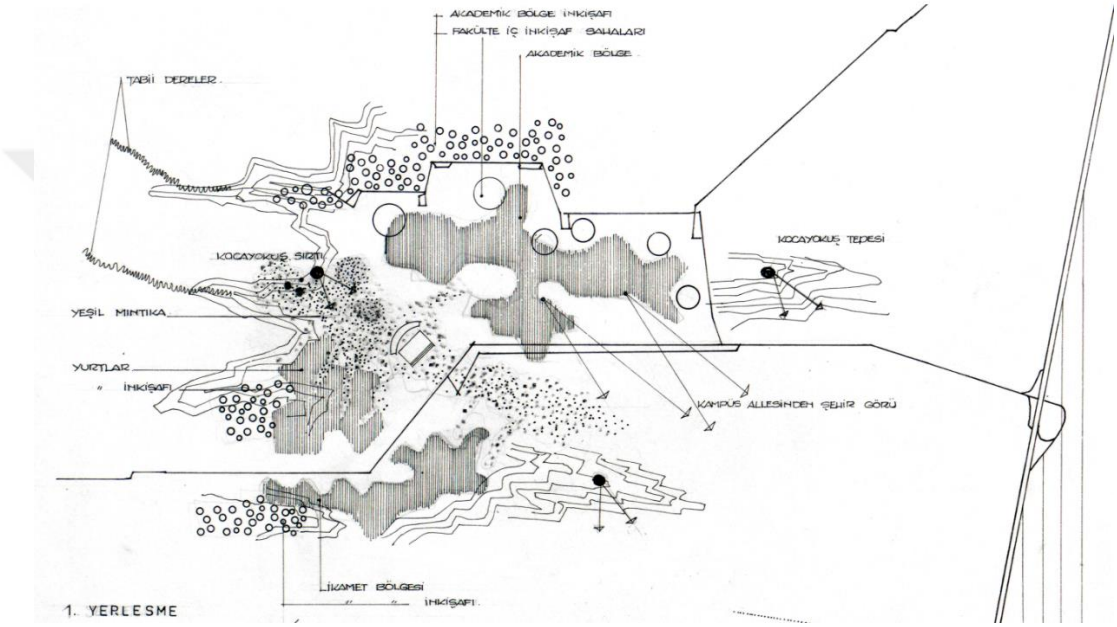

Figure 4.11. METU Campus Competition Diagram ‘Settlement’ 1960 by Çinici Architects. Source: METU Archives

This re-mapping process starts with the assumption that the diagram is composed of layers and the deconstruction is understood in its literal definition and refers to the analytical removal of the layers in the diagrammatic drawing. While identifying different layers, it should be kept in mind that each diagrammatic layer is projected upon itself. By doing so, the notion of each layer reflects another layer in a transitive manner and works as projection. Therefore, the deconstruction of the diagram reveals that layers are in a grift order and the design process is a completely different act, rather than linear development. The study was first conducted as a part of Arch 505 Campus Utopias Directed Studies by Ayşen Savaş in Spring 2020. With her

guidance, the layers are named, visualized and explored to understand the design process and projected information to other drawings.[92]

Deconstruction of each layer from the author's point of view cannot be detached from architecture and its historical context. Layers are the answers to the modernism period, to some extent being in parallelism or sometimes critical since the author and the object itself are deeply attached to that architectural framework. This diagram is evaluated as if there are embedded concepts and keywords of modern architecture, each layer will project some approaches that correspond to a theory as well as an architectural practice.

Also, the techniques of lines, hatches, dots are also examined in respect to modern architecture practices. The continuation of the drawing techniques is explored towards other drawings of Çinicis in this project. For example, the general site plan is evaluated in Getty Report as follows

> "The abstract curves of the topography lines, the urban grid, the indication of educational units with rectangular prisms and the sharp corners of the traffic roads and the pedestrian paths suggest a strong aspiration for Modernism. Rather than drawing the borders of the functional units and landscape elements, architects use an unusual technique. They draw parallel lines to represent the rectangular prisms of functional units. A hatch pattern scale helps them to represent a hierarchical order in three dimensions." p.92

In that sense, there are mainly six layers and some hidden sub-layers that unfold more in other diagrams and further drawings.[93]

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[92] During the course each group has a different agenda assigned by Prof. Dr. Ayşen Savaş on the exploration of METU Campus ranging from drawings, models, three dimensional aspects, its grid, details... Each groups exploration gives an expanded information ground which had impacts on the deconstruction of the layers and reading of the layers.

[93] Modernism and tropes of modernism are discussed in various scales from Goldhagen to Hitchcock and Johnson's MOMA Exhibition. Here, keywords and key concepts that lead the naming of layers have derived from the research process of two chapters, re-reading modernism and index of post-war university cases.

4.2.1.1 Layers

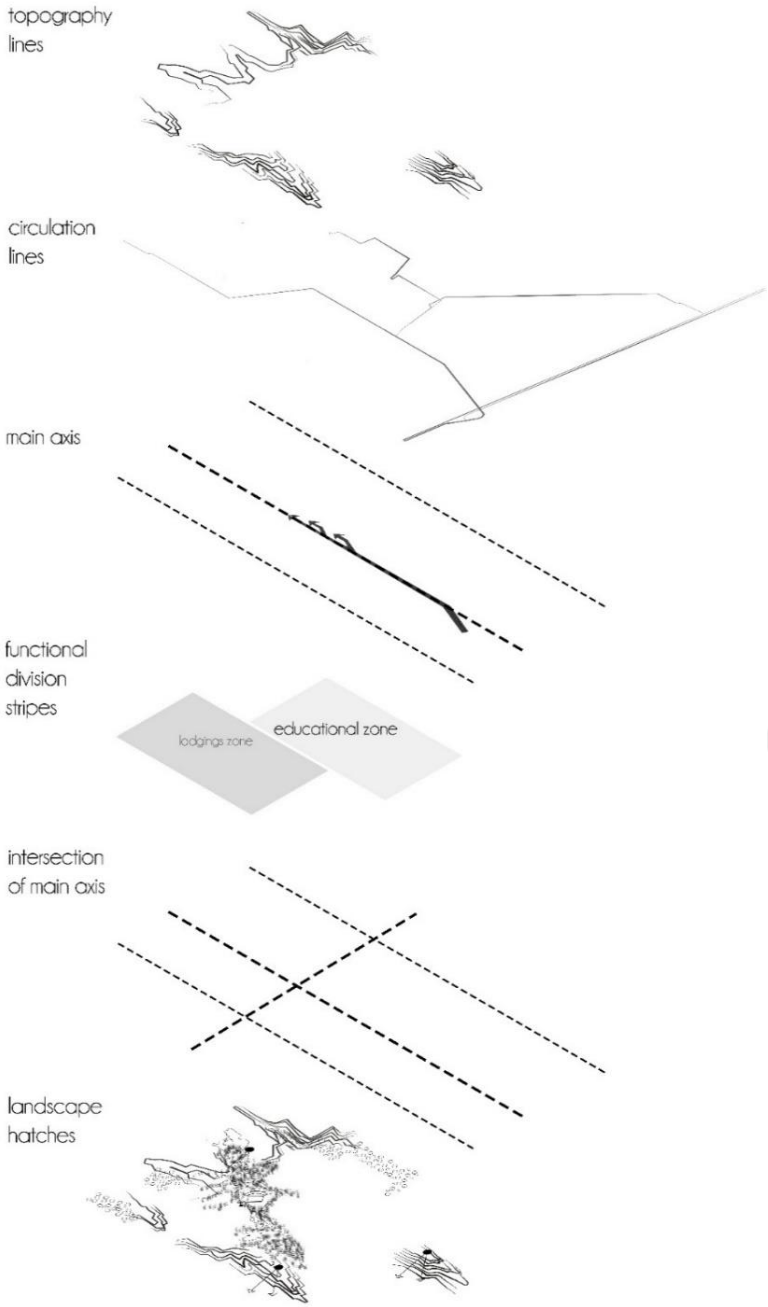

Figure 4.12. Exploded Vision of the Deconstructed METU Campus Competition Diagram 'Settlement' within the scope of ARCH 505 Spring 2020 by the author

Topography Lines

Figure 4.13. Topography lines

The first layer of this diagram depicts the topography lines. They are abstraction of the land, using Eisenman's words: '*the ground zero*'[94]. This abstraction method is a way of communication between the land and the architects as the first dialogue. Starting from the mapping technique, the zero position gives first references to the architects and the design process of how to 'mold' the land in a modern sense. The land is molded with architecture in a topological manner. Scratching from nothing, landscape, and architecture derived from topography. Topography transforms a base, and architecture itself becomes whole.

In other words, the concept of *tabula rasa,* which is defined as "a desire for sweeping renewal and creating a potential site for the construction of utopian dreams is the presupposition of Modern Architecture" by A.Mehab (2017) is so much there

[94]. *Oppositions.*2020 – *An Architectural Journal As A Manifestation Of The Architectural, Social, Cultural And Political Situation Of The 1970S In The United States And Europe*. [online] Janaculek.com. 2020

in the architect's mind since it projects to the paper as fragmented pieces of topography lines.

The topography lines (figure 4.13) are an enigmatic part of the diagram as a layer since topography lines are represented as three fragments enclosing a space. The projected notion is speculated as such these topographic lines hold potential settlement of the METU Campus. Like A. Benjamin states in "Lines of Works: Notes on Diagram" in *ANY* no:23 that "The line already marks a space, it marks it out by dividing and creating space. Further, he discusses the lines or other graphic representational indicators as to dictate positive and negative spaces. Thus, this topographical arrangement covers the positive space for settlement and provides a clear orientation by leaving the outer circle as a negative space.

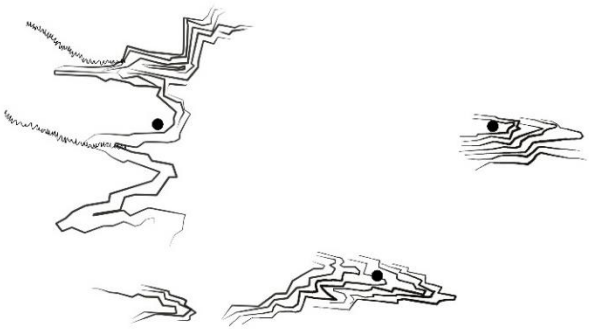

Figure 4.14. Topography lines and hill nodes

The definition of this space is divided into two within a topographical manner which works in three dimensions since each fragment indicates a hill area and naturally forms a valley. It is sensed from these fragmented representations that it is unknown whether the land requires it intuitively or the architect's force from the point of view of the barren land is a tabula rasa void, a mold... Sargın and Savaş (2013) discuss the ground condition as

> "The history of the transformation of the barren Anatolian bozkır, a literal translation of prairie, into one of the most prestigious schools in the region may be regarded as a unique case of how architecture, as well as

urban design, should be encapsulated within the originally emerging canons of environmental historiography."

Their argument questions the interrelation between the real situation and *tabula rasa understanding* since it preserves the environmental historical sphere in a sense is an important point for the site decision. In "*A University is a society': an environmental history of the METU 'campus'"* reveals how much topological learning ground as an urban design idea is important with references to the competition brief and reports. The core understanding can be summarized with how it has emerged from its virgin character and how it is approached and surrounded give the main character.

Circulation Lines

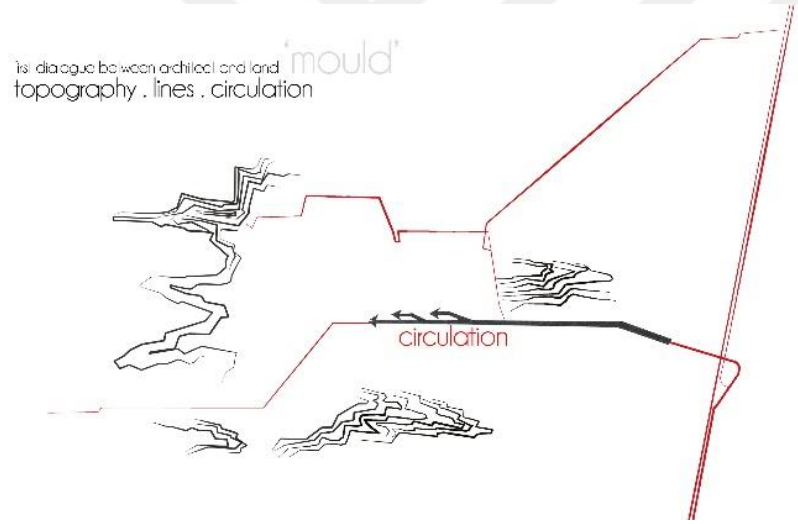

Figure 4.15. Circulation lines

The second layer is composed of the circulation lines. These lines locate the topography lines in a real context and define the connection with the city of Ankara. Circulation defines a general approach to the campus and articulates vehicle and pedestrian movement on the campus. These lines surround the space which is already defined by the topography and divide the land relative to the fragments of topography. That gives references to functional zoning decisions from land to the main infrastructure.

This circulation idea is an important component of modern architecture. In the historical review, its importance and projections to urban models have been already visible. Besides it is one of the four major components of CIAM: dwelling, work, recreation, and circulation in The Charter of Athens of CIAM[95]. From the CIAM to the Bauhaus School, it is always an important discussion that comes to surface in the architectural network.

For example, Stanford Anderson, in “The Fiction of Function” in 1987, argues about Hannes Meyer's architectural approach in his time at the Bauhaus, as he constructed diagrams of circulation to show the "factors determining a plan." This discussion shows that it is an initial stage decision as an approach to making urban organization and zoning. The circulation as a layer initiates the land order. Thus, the circulation and movement issues are important to focus on for modern theories and practices, especially to produce the urban environment.

Also, Çinici himself draws a circulation diagram focusing on pedestrian and vehicle timing. Considering the educational program of the campus timing provides integration of the living and accommodating services. “The path of our movement can be conceived as the perceptual thread that links the spaces of a building, or any series of interior or exterior spaces, together.”[96] (Ching, 2007. p.240) Zoning is deeply linked with this circulation idea. It can even be said that nodes have emerged from this movement pattern and the main axis and strong approaches are enhanced depending on this decision.

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[95] “The third dimension offering the possibility of freeing spaces for modern traffic circulation and recreation should be considered.” The Charter of Athens

[96] Ching, F. D. K. *Form, Space and Order. E-Conversion - Proposal for a Cluster of Excellence*. 3rd Ed. New Jersey: John Wiley & Sons, 2007.p 240

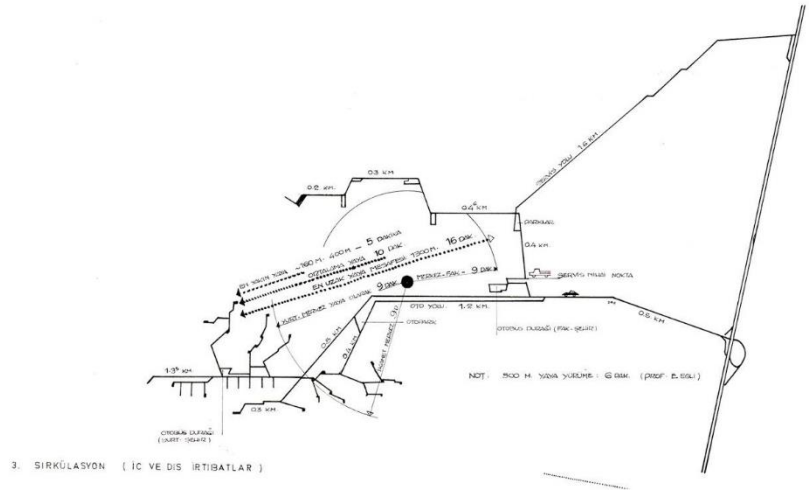

Figure 4.16. METU Campus Competition Diagram ‘Circulation’ 1960 by Çinici Architects. Source: METU Archives

> “Transport studies should be mathematized, a hierarchy of roads should be structured according to function, pedestrian systems should be separated from the vehicular, and a green belt should be provided along arteries.”

This part from the CIAM Congress Report 1933 The Charter of Athens may be the direct explanation of the circulation diagram of Çinici’s. It is mathematized for the programmatic responses. Functional necessities of urban living in the institution context blend and rewrite within these infrastructural frameworks.

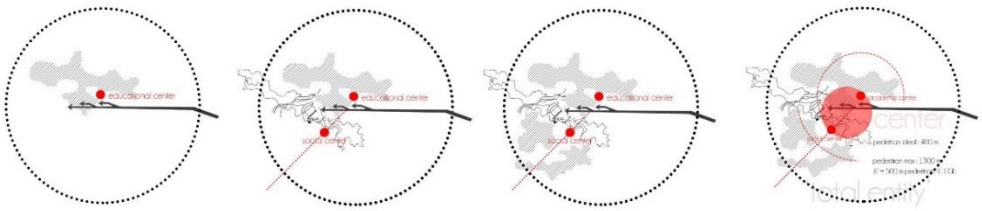

Figure 4.17. Circulation and node distribution diagram based on the original circulation diagram produced in Arch 505 by the author.

While CIAM has a strong statement about circulation, it is not surprising that the competition committee of the METU required a complex circulation program. Savaş and Sargın (2013) discuss the detailed report prepared by Perkins and Godfrey, and

pointing out immediate construction of the pedestrian pathways, arcades and terraces surrounding the heart of the campus that would not only unite functionally, but would also, from the very outset, be symbolic of the new university community'[97]

Axis

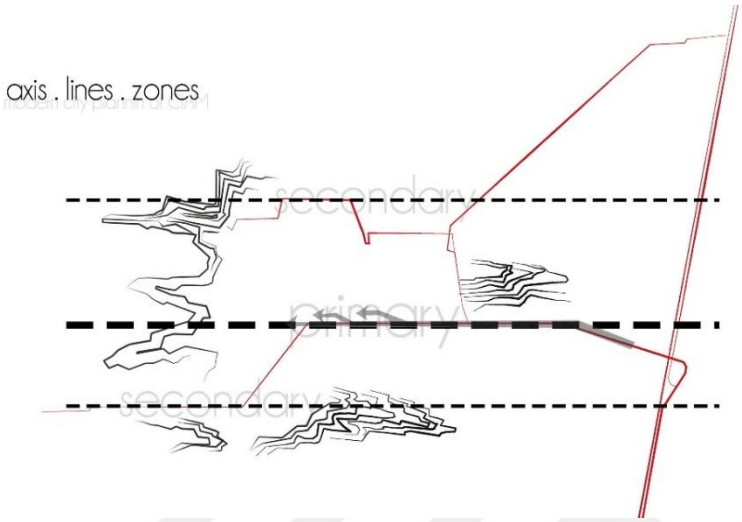

Figure 4.18. Axis

Circulation gives reference to land articulation by defining an invisible axis that divides the land horizontally. There are three horizontal lines and the one at the center corresponds to the main vehicle approach from the city. Therefore, it is the primary axis to define relationships with the city. Further, the primary axis works as an infrastructural spine. This hierarchical composition between the axis is reasoned by circulation organization and zoning regulations. Thus, between the layers, there are projected understandings that some design elements have much more guiding power over others.

[97] Report to the Board of Trustees on the Campus Plan of METU, December 1959, approved by Trustees in January 1960 (METU Archive). Retrieved from Sargın, G.A. and Savaş, A. (2013). 'A University is a society': an environmental history of the METU 'campus', The Journal of Architecture, 18:1, pp. 79-106, DOI:10.1080/13602365.2012.751806

Moreover, Ching defines the axis as one of the most elementary means of organizing forms and spaces in architecture.[98] "Although imaginary and not visible except to the mind's eye, an axis can be a powerful, dominating, regulating device." While Ching approaches the definition of axis starting from urban scale, calling Le Corbusier's "Regulating Lines"[99] words from "Towards a New Architecture" the term generally eligible for plans and elevation drawings.

Although the term is mostly demarcated in building scale, understanding an axis through golden ratio for ordering two-dimensional views to three-dimensional objects have significant concerns in architectural practice. It is valid for this diagrammatic evaluation, although it is in urban, territory scale. The axis functions as regulating line but in greater scale and greater abstraction. It regulates the land in a two-dimensional framework but also it functions in a three-dimensional way. Besides, its effects and projections on their organizational capabilities towards other elements support the diagram's settlement organization.

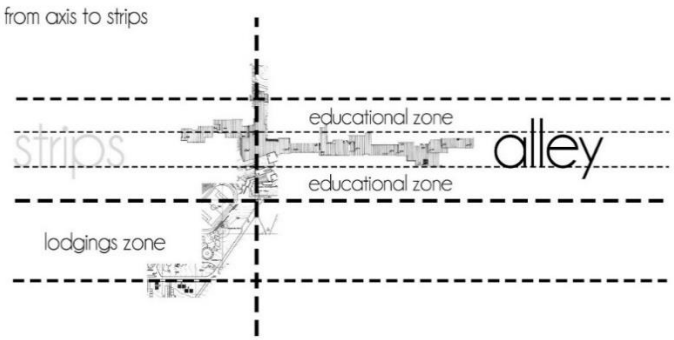

Figure 4.19. Axis and secondary axis divide the educational zone to stripes, collage diagram based on one of the master plans drawing of METU produced in Arch 505 by the author.

[98] Op. Cit. Ching, F. D. K. p.340
[99] Le Corbusier. (1931). Towards a new architecture. New York: Dover Publications. translated Frederich Etchells

For example, this regulating power of the axis is investigated deeper in other site plans of the METU Campus in the scope of the project. From the general site plan, it is readable that there is more than one axis that comparatively less important. These secondary axes are the regulatory guidelines for the three-dimensional articulation of the campus, voids and masses. These sub-axes correspond to a grid formation. The traces towards a grid can be studied in two organizations. The first one is the level changes of the alley is in a parallel orientation with the vertical axis of the master plan. (Figure 4.18) The second one is the facades of the buildings. The sub axis meets the orientation of buildings by guiding façades at the ends.[100] (Figure 4.19) Moreover, their operations in architectural environment can be traced from the drawings and landscape articulations. They regulate the zoning and divide the areas according to a notion. In Figure 4.16, two-axis divide the educational zone into three and these two set a boundary for the main pedestrian spine which is also an axis. However, the axis transforms, expands, and gains three-dimensionality and functions as a backbone of the educational zone.

This backbone or spine idea is mentioned by Sargın and Savaş (2013) as "The modern concept of architecture had to promote social utility and functional performance for the sake of the urban community and, in this respect, the pedestrian alley was regarded as the core of an emerging communal life." The Alley extends along from north to south in coherence with the topography. All of the diagrams of METU Campus are compared to search for the location of the Alley in the topography, it is visible that it is at the center of the void enclosed by the fragments of the topography. Moreover, different studies about METU reveal that "Buildings are articulated to the main pedestrian axis with determinant distant, and open and built-up areas' continuity is provided along the pedestrian axis." [101] Thus, these

[100] It is discoved by MelikeYürekli and Yelda Dinler in the graduate course Arch 505 Spring 2020-2021

[101] Akman, S. (2016) "Conserving and Managing Modern Campus Heritage: "Alleyé as The Spine of METU Campus, Ankara"

invisible axis in the diagrams are important design elements that have projections to the different architectural scales, especially work in building and interrelation of buildings scale.

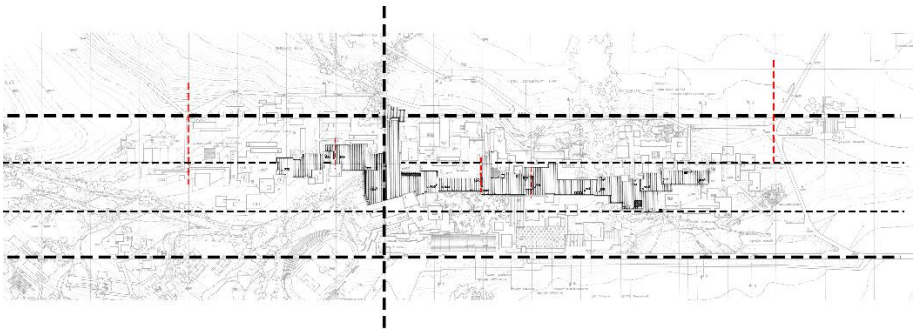

Figure 4.20. Axis and vertical axis overlapped on alley; collage diagram based on one of the master plans drawing of METU produced in Arch 505 by the author.

Figure 4.21. The relationship between the buildings and the grid based on one of the master plans drawing of METU produced in Arch 505 course in 2020 by Yelda Dinler

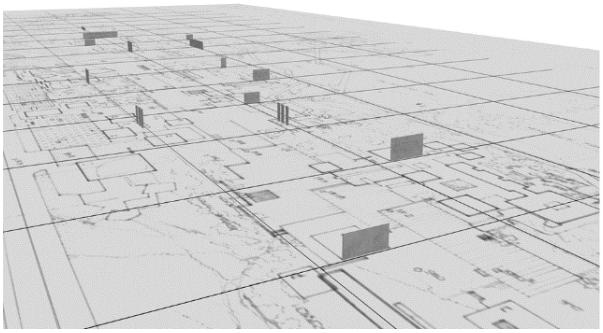

Figure 4.22. Façades on the imaginary lines of the grid in 3D based on one of the master plans drawing of METU produced in Arch 505 course in 2020 by Yelda Dinler

This three-dimensional backbone of the campus is called the "alley" and re-generated architecturally with invisible topography lines. In this process, the vertical axis of the grid runs an operation to form an alley and a landscape as a whole. The alley is in harmony both formally and functionally as a circulation element, and as a part of the landscape. Even it is hard to notice from the master plan, it is experienced that it serves as a glue of all educational and service buildings in the educational zone. It is visible with complementary studies in detail, building, and landscape scale. For example, the pavement of the main entrance of the main library building extrudes towards the alley. This pavement, experienced as an in-between space by pedestrians, becomes a part of the structure, as well as the building and the alley. In that sense, it transforms the educational zone into an invisible megastructure holding the infrastructural function. It molds the topography as a topological ground[102] and dissolves the horizontal bands of the grid in order to transform the land into a "habitable environment".

[102] Further information about the relation of the METU Campus landscape and its topological ground characteristic, see the thesis study of Sara Rraja "Gated Landscapes: Metu Forest and The Formation of a Topological Ground"

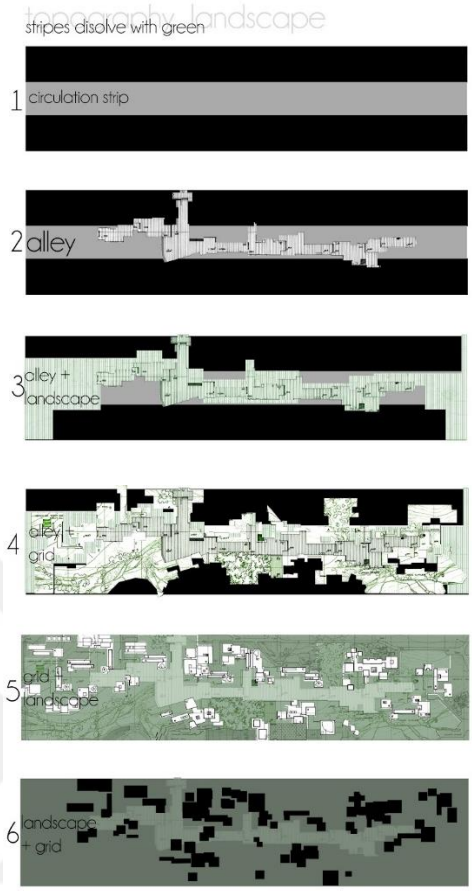

Figure 4.23. The diagrammatic evolution of the alley into a drawing based on one of the master plan drawings of METU produced in Arch 505 course in 2020 by author

Zoning/ Stripes

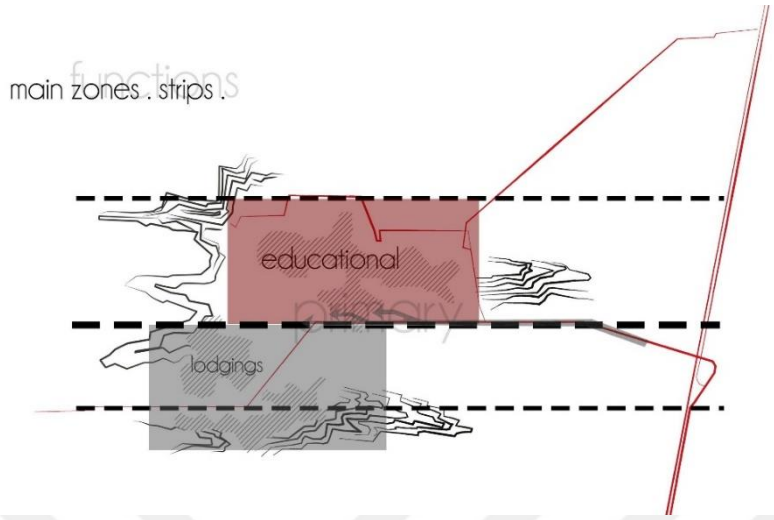

Figure 4.24. Stripes

These three main axes divide the settlement into two stripes and these stripes define two main zones: Education and Lodgings. Both two zones are supported by the primary axis since it is the main access from the city and works as an infrastructural spine. The topographical condition leads to the shifted articulation of these stripes by enclosing their boundaries. First the education zone becomes the first encounter with the city and the accommodation zone is placed as a second encounter after the education zone.

Although this diagram shows the academic zone or so-called education zone as approached firstly in unity, it is readable from the further drawing that the academic zone is divided into two with the help of the pedestrian axis, alley. Thus, academic departments are located around the alley and in the center of the zone, the generally the East side of the alley contains the functions like cafeteria, auditorium, rectorate, library, museum.

Figure 4.25. Zoning Diagram of METU Campus 1960 by Çinici Architects.
Source: METU Archives

In Figure 4.25, the zoning diagram of METU Campus is shown in a bubble diagram. This diagram is a thinking act towards the distribution of main functions. This diagram divides the land into two academic and non-academic zones. The zoning stage seems completely detached from the ground with one exception: the valley. Although Çinicis set a zoning diagram, it communicates towards other design tools. The elements in the diagram have an intuitive aspect as the projected architectural knowledge of the ground. The elements' determining and leading roles start to operate.

Even at this stage, two zones have subdivisions according to the accessibility circle. In that sense, the initial infrastructural ideas are embedded in the diagram as a complementary of the main functions. Since infrastructure should sustain the functions. Relatively, the main approach carries the infrastructure functions and create continuations of the axes in particular for the academic zones. These aspects become partially readable in this diagram as well. The alley is indicated with 'forum' and two white rectangle hatches on the diagram. These parts of the drawing serve the first glimpses of the alley idea, the spine of the academic zone which is required according to the competition brief. On the other hand, the diagram is a different abstract level in the sense that it is not blended with other layers totally or the ideas

are not projected fully. Still, the zoning indications are not sharply represented. For the academic zone, the design phase can be read comparative to the settlement diagram. In this stage, it seems the design approach is at the edge of melting functions into each other through architectural elements. The notion of natural elements and topological elevations like valleys is introduced. The physical approaches from the city are placed within the consideration of pedestrian accessible spheres. In the following stages of the study, bubbles dissolve with design tools in other diagrams and the visible and invisible lines of the grid become readable.

In the CIAM's The Charter of Athens (1933), zoning is evaluated as an important operation that carries out all functions in measure of order in the urban territory.[103] Hall (1988) states that zoning became accepted as the principal planning tool. Thus, it can be understood as, Çinici's approach is a projection of the architectural context of the time, led by its architectural background and education.

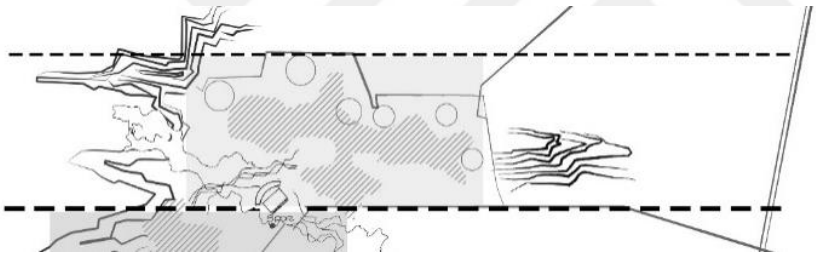

Figure 4.26. Focus on Zoning

Further, Çinici illustrates the primary settlement articulation of these two zones with hatches located in the invisible stripes. Circles in the educational zone refer to further development areas that are not free from the topographical limitations yet. Therefore, he evaluates the campus as a city that needs expansion and improvements in the future. He limits these further developments with the axis and topography which

[103] Grossman. (1973), New York, Translated from the French by Anthony Eardley. From Le Corbusier's The Athens Charter. Retrieved from https://modernistarchitecture.wordpress.com/2010/11/03/ciam%E2%80%99s-%E2%80%9Cthe-athens-charter%E2%80%9D-1933/

transform the build environment with circulation to sustain the division of functional zoning. It is an important approach that we came across in the historical overview again and again as a part of the technological developments of modernity. The compatibility of the design with future demands is on the agenda for campus cases, and many architectural projects of the time too.

Node

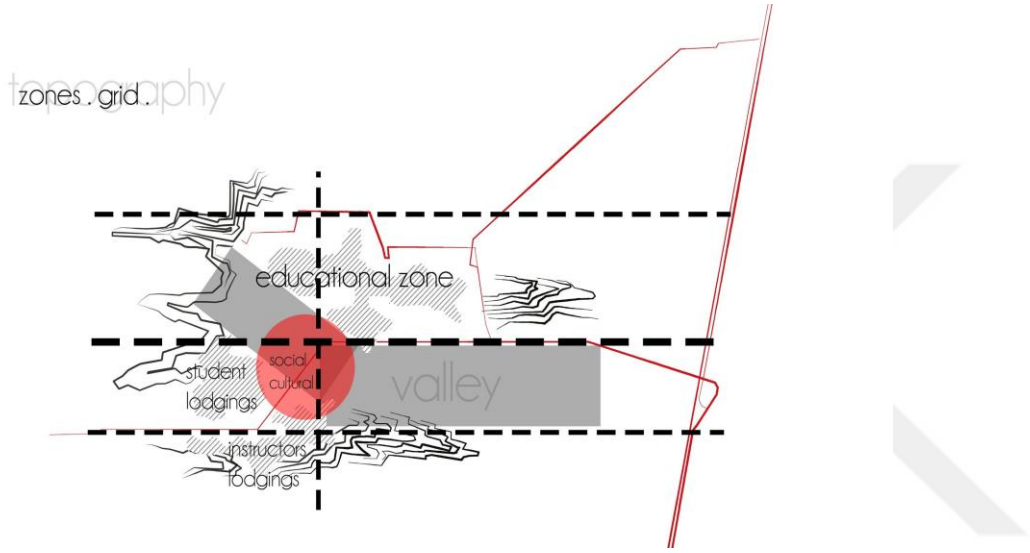

Figure 4.27. Node

The vertical axis that cuts through three horizontal lines defines a turning point for circulation which gives references to further division of the main settlement space. The intersection of the primary horizontal axis and the vertical axis gives first references to the grid as a zero position. This intersection defines a central node in which all campus functions blend into each other and social-cultural activities take place. (Figure 4.27). Intersections of these main axis are demonstrated as a red circle which divides the above-mentioned two stripes into smaller zones with the help of the landscape layer. Also, in the zoning diagram this space is framed with three nodes; A, B, C. Three nodes construct a triangular probably high attention environment since it is located in between the academic and non-academic zone as well as the main circulation axis ends in the intersection of the three nodes

K. Lynch (1960) defines ‘node’ as “the strategic spots”. What it has seen in the diagram is a very strategic point that functions parallel with Lynch’s further explanation; “They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another.” That node point throughout all layers reflects a significance which is functionally, topographically, and orderly have importance.

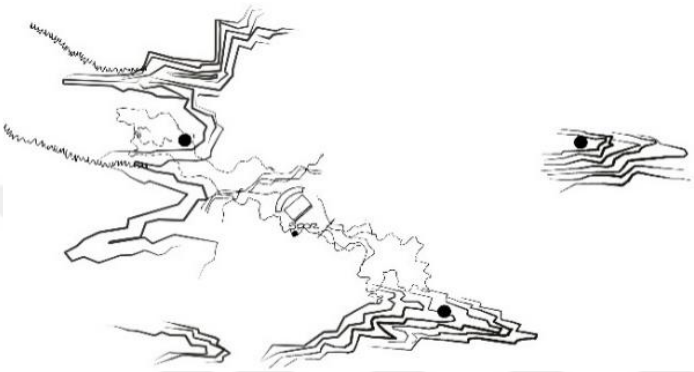

Figure 4.28. Valley

Further, about the nodes, there are hill points that are introduced by the topography and interpreted as viewpoints by the architect. These three points reveal the determination of the orientation of the campus settlement to the city with views. These nodes are still nodes which have a different characteristic than the urban context. Since they are located at the edges of the settlement area within the definition of rural characteristic, it is the intersection part of the production of an urban environment on the rural ground.

Grid

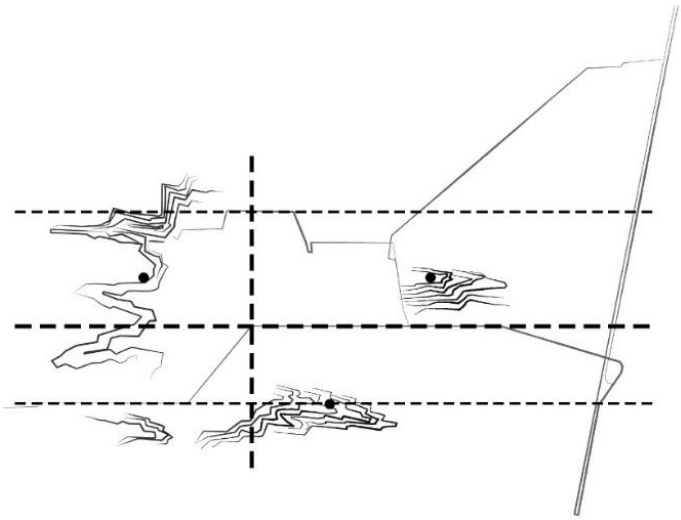

Figure 4.29. The intersection of axis

The grid as a design tool and an architectural entity of the campus has a major role in the design process. Even though it is not illustrated in the diagram, Çinici's original campus drawings include the grid as horizontal and vertical lines that structure METU Campus as a whole. The grid was initiated based on the main three horizontal lines that correspond to the circulation and the vertical axis which their original references are the topography. The grid as well as the topography comes from ground zero and works as projections to architecture and landscape.

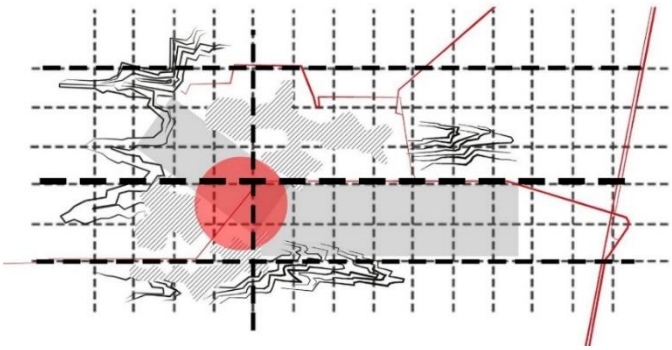

Figure 4.30. The invisible grid /superimposed from master plan grid

“From earliest history humans’ close kinship with nature has guided them toward a sense of proportion in the shaping of their world” [104] Needless to say, the grid idea has many projections from history and various scales in modernism. Grid is no new agenda for modernism. It has been an urban ordering rule since antiquity dated 2600 BC. [105] At CIAM VII in Bergamo (1949), the grid was presented as an analytical method for comparing the various subjects and designs discussed at CIAM congresses. The main discussion behind the grid is ‘challenges that modern society poses for urbanization’ (Risselada, 2005) [106] Possibly, just projecting the network relation of the grid with the modernism become a misleading interpretation for the case of METU. Because the urban historical context of Ankara goes back to the Roman period which uses a gridiron plan layout in many cities. Anatolia has many roots in that sense. Then, the iron grid is a known and experienced urban fabric for the region. Thus, the tabula rasa case for the land of METU Campus stands as a question. The level of references Çinici as an architect interprets from the historical grid or from the modern grid are still unknown.

Figure 4.31. The Alley – Salt Archives

[104] Hurlburt, A., The Grid: A Modular System, 1978
[105] For more to see: the grid plan, grid street plan, or gridiron plan https://en.wikipedia.org/wiki/Grid_plan
[106] Mumford, E. (2000). CIAM Discourse on Urbanism, 1928-1960. Cambridge, MA: MIT Press. Retrieved from https://transculturalmodernism.org/article/132

Ching defines the grid as an organization consisting of forms and spaces whose positions in space and relationships with one another are regulated by a three-dimensional grid pattern or field. Also, the organizing power of a grid comes from its regularity and continuity with respect to the repetitive parallel lines, and intersections points. He underlines that even manipulations like subtraction, addition or layering cannot distort the identity of a grid which pursues its ability to organize spaces. While he discusses the example of City of Priene in Turkey, the architectural projection capacity of a grid from mental design level to the reality with consideration of land unfolds with these words. "Across its field, a grid can transform its image from a pattern of points to lines, to planes, and finally, to volumes." [107]

Figure 4.32. The METU Campus first board general site plan 1/5000 close up – retrieve from the report p.93

[107] Op.cit. Ching, F. D. K. pp. 230-237

This drawing is from the competition located on the first board. The drawing depicts the placement of the building units on topography lines, immediate landscape elements surrounding the buildings, main roads and intercity connections, the main pedestrian path with main functions in distinguishable detail. The remarkable point of this drawing is that even if there is no grid expressed in a visible manner, the idea of grid and its regulatory position is available in the building mass organization and open-close space relationships. "The whole site plan presents a "rational" order guided by an invisible orthogonal grid, of which there are traces left particularly in the housing session." [108] Also, the discussion about the hatching techniques shows the reading of the plan in three-dimensional.

Keeping It Modern Project Report (2018) discusses that the grid of the campus is an organizational and systematic layout of multiple scales. It works as a structural element as well as setting the spatial framework to sustain interconnection between buildings perceiving as modules. Moreover, the grid offers a ground for uninterrupted flow of open spaces of the campus. Savaş states that the campus was design as a total entity which the 100x100 grid becomes a three-dimensional modern grid spread over the barren Anatolian prairie. [109] The three dimensionality of the grid is regulatory for levels in the topography both for landscape and buildings. In this regard, Savaş describes this three-dimensional grid that permeates all the space by aligning not only to buildings but each single urban elements from detail scale; wall, parts of the wall; window by resolving into smaller grids. Even paths become a part of the landscape stripes. The whole system reminds the modularity approach where the grid lines have divided into two and smaller which lead the architectural elements as a guideline. Also, Savaş states that the grid and its three-dimensional projections

[108] For the further discussion about hatching technique see Keeping It Modern Project Report (2018) p.92
[109] Ayşen Savaş Campus Utopias II; Creative Rereading Middle East Technical University Ankara, Overholand 2022 (in prep.)

to architecture raised from the evaluation of the topography as a topological ground.[110]

Figure 4.33. Master Plan Drawing of METU Campus -Salt Archive

Besides the architectural function of the grid, even if it is invisible in the diagram, it is known that the grid is also work as an infrastructural grid to prepare a systematic layout for the new and developing urban conditions. The projection of the grid into the infrastructural system is not a coincidence, a rational system is needed to provide a sustainable service ground to the campus. [111]

If it is discussed that what makes this grid a modern grid, it is in the statement of Sargın and Savaş (2013). Its traces start from the site plan and become visible in

[110] See Rraja, Sara. (2022). *Gated Landscapes: Metu Forest And The Formation Of A Topological Ground* (dissertation).

[111] Ağırsoy, Ömer Faruk. (2022). *Intelligent Infrastructures: Anatomy Of The Metu Campus* (dissertation).

building drawings and details. Since there is the alley idea that visually and functionally breaks the idea of zoning. The architectural object shows off with its three-dimensional grid. Building masses and volumes can be examined in this grid organization in parallel to the alley as a continuous platform. The grid can be read as a total structure from alley to the building with expanding living practices of modern society. The alley as the main circulation and modern social interaction space blends in with the circulation space of buildings which transforms into informal education spaces. Also, vice versa as the learning functions from the classes to the alley flows. Thus, the grid and its transcoding can only unfold to look closer at the real situation and the more complex sectional and building drawings.

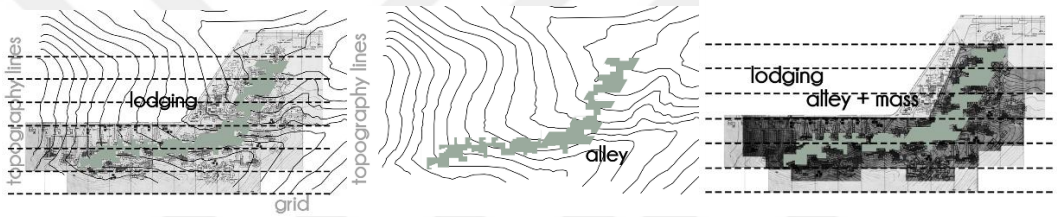

Figure 4.34. the interpretation of the lodgings' alley produced in Arch 505 course in 2020 by Yelda Dinler

Also, the issue of modularity is triggered by the grid and topography together. It can be interpreted as it is more visible in the design of the lodgings for professors. The first approach for the lodgings is to adapt to the slope of the topography, and the overall campus design. Furthermore, the articulation of this zone in the topography sets a different relation with the stripes of the grid but still there is a continues open area in this zone. The studies in Arch 505 course in 2020 spring reveals that the circulation area in between the lodgings serves the function of alley. Yelda Dinler and the author try to visualize this relationship between the mass and the open areas. Then, the visualizations present that the alley is located on a valley which organizes the group of lodgings.

The photograph of the lodgings[112] area from the construction phase, it underlines that the topography is the main guideline, while the placement axis of the masses are open to further development in time. In this regard, the topography is the modular topological ground.

Landscape

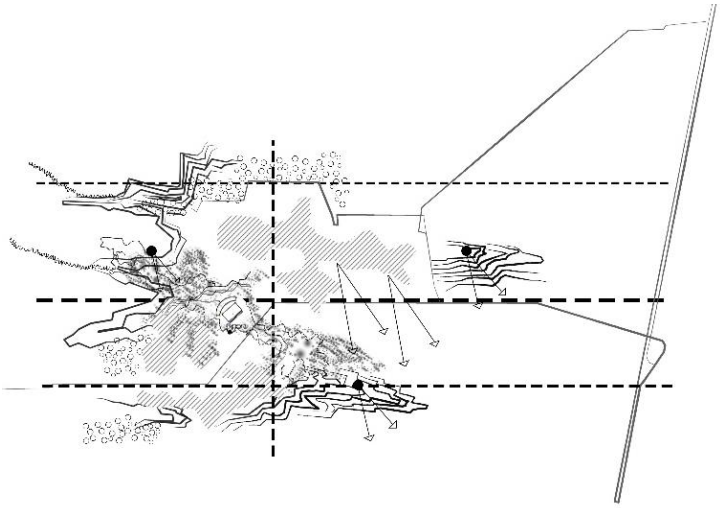

Figure 4.35. Landscape elements

Space definitions of these zones are re-articulated by the landscape hatches as a finishing line after topography and circulation lines. Landscape complements other layers by blurring boundaries of zones to integrate the whole. Is it the last layer that projects upon other layers as a design tool or the very first one after understanding the topography, it would not be possible to point out?

Locations of viewpoints on the hill areas give orientation to the campus (Kocayokuş Hill) and the articulation of landscape is differentiated from this directionality. The lower part of the main circulation as a valley is intentionally left blank in the diagram. Landscape elements in the front parts of the viewpoints maintain views of the city.

[112] "Altuğ-Behruz Çinici Archive - Middle East Technical University," SALT Research, https://archives.saltresearch.org/ accessed 11.12.2021

Thus, two hatching types define different landscape elements: circle and paint stain. The in-between area of the two main zones is illustrated by the point stains hatch which corresponds to a soft surface that can function as a recreational transition area providing an open view to the valley part. It is in the main node; junction area and the spatial characteristics of this space are very suitable to move freely. In that sense, it enlarges its physical definition to unite two main functions. While the back parts of the viewpoints are defined with hatches of circles. Circles correspond to trees and as a hatch forms a forested area. Circle hatches are generally located to surround the outer edge of the zones and the circulation lines. This hatch indicates a finishing line for the built environment of the campus while also limiting the extension possibilities. In this regard, the architects take control of the further urban decisions of the campus in a very clever way.

Sargın and Savaş (2013) state that this artificial landscape as an ideal landscape symbolizes the integrity of rural and urban life. Before that, the competition brief already prioritizes the design of the landscape. Design of the landscape is important since; "It was presented relationally with architecture through practices, performances, and appearances". It projects the idea of society by surrounding the landscape ground also it projects and transforms architectural tools such as core walks, arcades, pools, retaining walls, fountains, sculptures, and terraces. Although it seems the last finishing layer for the design stages, it projects every layer and every design scale for the campus.

> "…The metaphor was very appropriate as the site was indeed 'virgin', devoid of any flora or structure, which is perhaps why the jury members asked for, in their own terms, 'sympathy to site'. This necessitated, besides 'architectural expression' and 'choice of materials', 'the treatment of spaces

between buildings', meaning that priority was to be given to the design of the landscape rather than to the design of the buildings." [113]

Furthermore, this landscape-based campus idea as a living style with the high integration of landscape was visible in many campus cases in American colleges and universities in the United Kingdom.[114] Besides, the collective housing projects of the time are inspired by Le Corbusier's "Plan Voisin" (1923), artificial landscape ideas can be also traceable to these urban projects.

To conclude this chapter and the re-mapping process of the diagram, the diagram is composed of mainly seven layers which are illustrated in Figure 4.10. However, the deconstruction of the diagram and the complex positions of the design elements show that the diagram cannot be simplified with the orders, in fact, it is a misleading representation, since these seven layers are interconnected and cannot be understood without the interpretation of other layers' projected notion in actors and agencies in modern architecture that could be influential. It seems as if these projections work just as visible references, but visually combining these projections could not be possible because of the level of interpretation within the scope of this thesis. While identifying different layers, it should be kept in mind that each diagrammatic layer is projected upon each other in a literal and conceptual sense. Therefore, the deconstruction of the diagram reveals that layers are in an intricate order and the design process is a completely different act, rather than linear development. In the process, the layers as design tools become projections themselves. Thus, this act of 'projecting' between layers makes the design of METU Campus unique. The campus

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[113] Op.cit. Savaş and Sargın, p.94

[114] For further information about the landscape and modernity projections; Savaş and Sargın give reference to; Cosgrove, D. (1984) Social Formation and Symbolic Landscape Wisconsin, University of Wisconsin Press. Marx,L. (2000) ;The Machine in the Garden: Machine and the Pastoral Ideal in America, Oxford, Oxford University Press. ; Mitchell, D. (2004) 'Writing the Western: New Western History's Encounter with Landscape', in, N. Thrift, S. Whatmore, eds, Cultural Geography: Critical Concepts in the Social Sciences New York, Routledge.

architecture creates a social, academic, and architectural unity.[115] It reflects not only an architectural unity but also social and academic integrity that is dreamed can be experienced from today which is achieved firstly by its architecture. It is impossible to understand the whole from one layer. Each decoding and layering serve for the total frame. On the other hand, it comprises a campus definition that parallel aspects can be tried to read within different case characteristics and become a guideline to understand the cases' actor network relationships. In a sense, the diagram projects itself to the reality of METU Campus, as "an ideal and total university environment"[116] which causes a modern campus definition. Considering the discussions in the Index of Post-war University Cases chapter and Re-mapping METU chapter there are scales of modern campus that vary from city/territory, campus/infrastructure to building/structure and detail/material. This Re-mapping METU chapter reveals that parallel reading should be in consideration of campus scale and its following issues; landscape, grid, circulation(ring), community organization (gated society, spine/backbone/alley, the pattern of space (open/close), integrated complex living program, considering political drive, institution agenda, local culture stimulation like more intangible aspects.

4.3 Parallel Reading of Campus Cases

This stage of the study is built upon the campus definition visually and textually derived from METU Campus diagram. After investigating the cumulative understanding on modern campus and its network relations by reviewing actor interconnections, this stage is envisioned towards each case's general information spheres presented in their Getty Reports by processing their unique assemblages

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[115] Op.cit. Savaş and Sargın, pp. 79-106

[116] Sargın, G.A., and Savaş, A. (2013). 'A University is a society': an environmental history of the METU 'campus', The Journal of Architecture, 18:1, pp. 79-106, DOI:10.1080/13602365.2012.751806, For further discussion, please refer to Muthesius, S. (2001). The Post-War University: Utopianist Campus and College, Paul Mellon Center BA , Yale, Yale University Press

within architectural terms. In this stage, the representational language of diagram is detached from its architect's architectural language. In some cases, there is no diagram at all drawn by its architect. By contrast with Çinici's abstraction tools, to trace the projected design strategies through diagrams for each case could not be manageable in the scope of this study. Each case is unique in a sense, and comprehensively understanding and studying the cases' architects would not be possible. The primary goal is to provide a consistent information sphere for comparative reading and to resonate the information spheres discussed in the METU Campus case as a ground zero example.

In this regard, four cases are studied: Universidad Laboral de Cheste, Ife Great Ibadan University, Universita degli Studi di Urbino Carlo Bo, and The National Schools of Art of Cuba. First and foremost, these cases are in the list of Getty Awarded, red list. Hence, it is still a part of the Campus Utopias project as an expansion of the studies on red list. These four cases are significant because their buildings are recognized by a Getty Conservation Keeping It Modern Project. Although the campus cases were not granted, in the grant reports their significance on campus architecture were discussed in detail which gives a comparative archival information provided by their committee. Relatively, the information sphere of each case is discussed mainly based on their conservation management reports. The availability of these reports is critically important since they are prepared by their board of architecture in light of the campus's importance as an architectural and social entity during their time.

The secondary reason behind the selection is to sustain regional, cultural, and political variety among other cases in the red list. Their spatial temporality also gives strong references to their local architecture. In that sense, these cases are tangled with the international as well as local which complexifies also the actor network relations and its research. For example, the influence of local architecture is visible starting from urban scale to detail in Cuba whereas Obofemi reflects more on art. In this regard, their visuals starting from their photographs to drawings and diagrams show strong differences which cannot be put on comparative grounds. The situation of the

cases can be interpreted as these cases challenges to become a part of third world modernism, other modernism, or tropical modernism approaches. However, according to this study, modern campuses develop their distinct architectural discourse synchronously as an urban model in the ecology of modern architecture. Local influences are regarded as part of the network's natural knowledge flow. There is no absolute international, only an ongoing exchange of architectural ideas. The visualization of this flow has already been studied with the map of modern architecture actors. More than just actors, architectural exchange occurs between nature and campus projects, society, campus projects, and so on.

Lastly, not placing any American or British model, college, among these case studies is a conscious decision. Since there are many sources focusing on these two geographies. Moreover, the idea of novelty and invention in educational spaces would be challenging without the considering these two geographies conduct their own sub network. Their local architectures should be elaborated within the historical ruptures and continuations of their own ecology. The information sphere should be elaborated as much as possible to cover all actors and networks of the assemblage.

4.3.1 Universidad Laboral de Cheste Campus

According to the Getty Report, the historical framework of the university is unfold as Paraninfo de la Universidad Laboral de Cheste built in 1969 under the rule of Francisco Franco, in Cheste, Spain. It is built on the agenda of providing several educational and vocational training centers for workers' children. Thus, the institutional image of the university is directly linked to workers, and the Ministry of Labor. In that agenda, 22 universities were built in different cities between 1946 and 1976. All these 22 universities constructed under the dictatorship are significantly important to trace the socio-political projections to the educational environment and how they blended within the international architectural agenda towards Spanish modernism. In this regard, The Cheste Campus cannot be considered as the representative member of the Spanish modern architecture in these

five cases of the thesis study, but it should be thought with its ideological ambiguity in the so-called modern society. The variety in the master plan scheme, and the highlights in the structural manner can be grasped from the 4.36 which is the list of DOCOMOMO by giving the interior details side by side to the aerial views.

Figure 4.36. The 22 Universities of Workers in Spain During the Dictatorship DOCOMOMO Archives

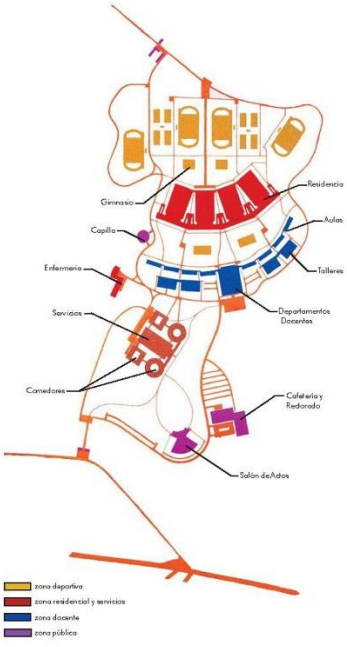

Figure 4.37. The original diagram of the Cheste campus retrieved from the Getty Report

The design of the campus belongs the Spanish architect Fernando Moreno Barbera, which was the author of three other educational centers in Palmas, Toledo, and Malaga. Among them, the Cheste campus, as the first one to build, became a model for housing students with a scale shift which aims to serve approximately 5,000 inhabitants.

The auditorium complex of the university, the Aula Magna of Cheste, was supported by the Keeping It Modern award in 2019 after the nomination of Universitat Politecnica de Valencia. With its 5,234 seats, was among the largest halls of its time, and beyond the economic restrictions it is characterized by its supporting structure. Other educational spaces awarded in the 2019 Getty Keeping It Modern list are Kaunas University of Technology, Politecnico di Torino, Universidad Nacional de Cordoba, Universidade do Minho.

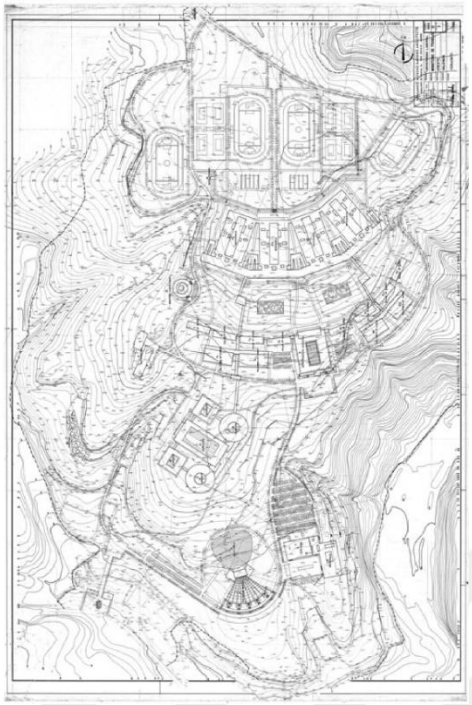

Figure 4.38. The master plan of the Cheste campus retrieved from the Getty Report

According to the brief in the Keeping it Modern grant award list of 2019, the physical context of the university is unfolded; “Built on a large hillside, the campus layout responds to the contours of the surrounding landscape and includes sports facilities, dorm rooms, classrooms, and art studios.” The university has an image within totality in function and form as well as landscape. Besides auditorium, the emblematic piece of the campus, the architectural significances of the campus as a total model should be examined. The architectural remarks of the university start with its auditorium, its mentioned bold geometry, enormous volume, and prominent structural ribs are recognized by the Spanish Ministry of Culture but continues in the general sense of the campus with its ambiguous socio-political contingencies.

Before establishing the framework of the construction circumstances of the campus, Fernando Moreno Barbera as an architect and actor should be introduced. His work is evaluated as “an undoubted assimilation of the Modern legacy”. He is graduated in Madrid and well-known with the publications of DOCOMOMO Ibérico. He is notable with planning skills which can be traceable to the period he worked with

Professor Paul Bonatz (1877-1956). In the conservation management plan of Chester Workers University[117] the modern movement presented as a point of reference. His works in Cheste and before Valencia are evaluated as a masterful interpretation with the experimentation on concrete, in particularly on plasticity. The success of the architecture challenges international counterparts like in Brazil, Mexico, Caracas which they built by cosmopolitan professionals.

Also, contextual terms of the university are discussed in the CMP (2020) (conservation management plan). The political frame of the time shows that the institutional formation of the university as a "charitable educational nature" is derived from the law in 1955 after the example of Universidad Laboral de Gijon (1946-1957). The idea was the part of the General Franco's policy: "record construction in Spain, built in a minimum period of time" (Jordá, 2010). This idea brings some changes to the architectural process.

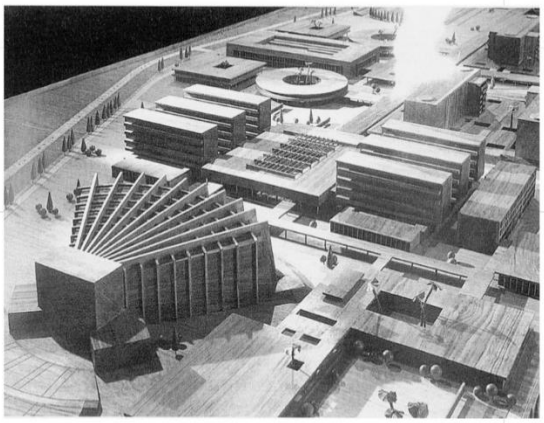

Figure 4.39 Model of the Cheste Campus in its initial site retrieved from the Cheste paraninfo digital archives

[117] Jordá, C., Palomares, M., Iborra, F., Gradolí, C., Herrero, P., and Usó, F.: CONSERVATION MANAGEMENT PLAN CHESTE WORKERS UNIVERSITY AUDITORIUM (SPAIN). A GETTY FOUNDATION KEEPING IT MODERN GRANT, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLIV-M-1-2020, 861–869, https://doi.org/10.5194/isprs-archives-XLIV-M-1-2020-861-2020, 2020.

The story of the university as a project started in a different site on the coast, El Saler, but later adapted to a hillier site as 22 kms from Valencia. This change is reasoned for better conditions in the landscape. The initial site is located on 243,700 square meter flat area at sea level. Figure 4.39 shows the model of the campus on its initial land. The evaluation of the overall orientation reveals that the buildings are articulated too close to each other by Brencea Caraghiosu. It could be problematic in terms of sunlight use in winter season. Also, other environmental circumstances are challenging in terms of controlling humidity and heat. [118]

Figure 4.40. Comparison of two different site for the Cheste campus plan retrieved from the final presentation in Arch 505 course in 2020-2021 Spring term

On the other hand, the second land is 1.485.821 square meter rugged terrain. This land provides more area for educational buildings and found potential since steepness in the topography can be used for lighting and better sanitary conditions.

[118] Caraghiosu, M. A. B. (2010) Relaciones Visuales Configiraciones Exteriores en la Universidad Laboral de Cheste, 36-40

Various functions are grouped for meeting the complex program of requirements by taking advantage from topography. In this regard, levels in the topography avoid the overcrowding the simultaneous usage. Further about the functional division in the master planning, the levels divide the land. In the CMP, the zoning decisions unfold from the highest level to lowest level, which highest level serves for sport facilities and the residential area with four buildings. The following level is the greatest area spared for the general academic activities; the departmental building and teaching areas with eight classrooms and four workshops. Also, in this area two swimming pools are situated. Among them, the departmental building has an image of being superior to other buildings in this level. The one level below is generally for service functions. The service functions are gathered in one complex with two circular and two squares' masses. The dining room, medical center and complementary functions are in this complex. The lower level is accepted as the representation zone which is emphasized with the singular volume of the Main Hall open into an open-air auditorium. The final attempt to the site is to transform the rural landscape into a small garden city. However, the logical approach behind zoning decisions is possible from the lowest level to highest which means from the entrance, the most public sphere to the private areas. In this regard, the reading of the levels becomes more architecturally readable. Also, Caraghiosu (2010) states that the campus is not totally different in the agenda of constructing workers' education centers, total 22 universities. The critical turn is in the land choice.

Figure 4.39 shows a comparative perspective between two sites. The interesting part is that the mass compositions of the buildings seem to be decided. It can be evaluated as the function as well as the stylistic decision follows the modernism paradigm. Caraghiosu states that these prearranged masses should be evaluated as an example for Fernando Moreno's work. Since as an architect his starting point is a module which is free from contextuality. Caraghiosu' perspective is that this predeterminate module orders the project in the territory without the fear of distortion. At the same time, module as a structure manages to establish internal relationships in each building, and between them from the general to particular. From the model, it seems

the physical environment is only a parameter for the composition of the building, but not the building itself. In that sense, it can be interpreted that the façade arrangements are revised after the land is changed. Since Caraghiosu argues that the climate solutions are used proportionally simply to the functions of the buildings. Generally horizontal solar protection elements on the facades are placed in the facades open south while vertical ones are placed on the facades facing east or west.

The determinant role of the land is more visible when the topography is not flat. When the first land introduces an axiality from entrance to the inside, the second land also forces a radical approach. Caraghiosu points out the buildings order is studied by the architect with some geometrical and formal operations; scaling, scrolling, rotating, grouping. These operations are hold after the zone segregation and fragmentation of the functions and critically conducted to arrange open, and semi-open places like courtyards, back gardens, and in-between spaces. The importance of the location comes along these set of decisions where one function fits specifically that location. The distribution of the spaces and functions needs a higher complexity. The ultimate agenda of the architect is defined by establishing visual relations that define the character of the architecture of the campus and the environment surrounding it beyond responding to the functions.

Furthermore, the master planning decisions of the campus can be traced from the design documents presented in the Getty Report. In this report, circulation is discussed with reference to the Athens Charter. Traffic is segregated and pedestrian circulation is studied with architectonic elements. The concrete strips are designed by “gradually colonizing the territory by creating spaces for coexistence and shelter for daily transit”. This element and the free-standing ground floors which are in integration with this element are elaborated as Moreno Barbera’s main stylistic focus and reminders of Le Corbusier. Further references are the Brasilia Campus, the concrete shading elements which are located on the ceiling play with light and shadow. In particular, the representation place embodies the interesting experience of this ceiling arrangement. Cafeteria, administration, and the President’s office

evolve as one megastructure with open and fluid spaces linked with the ceiling. In this regard, the report calls that it is similar to the meshes of the Brasilia Campus.

4.3.2 Ife Great Ibadan- Obafemi Awolowo University Campus

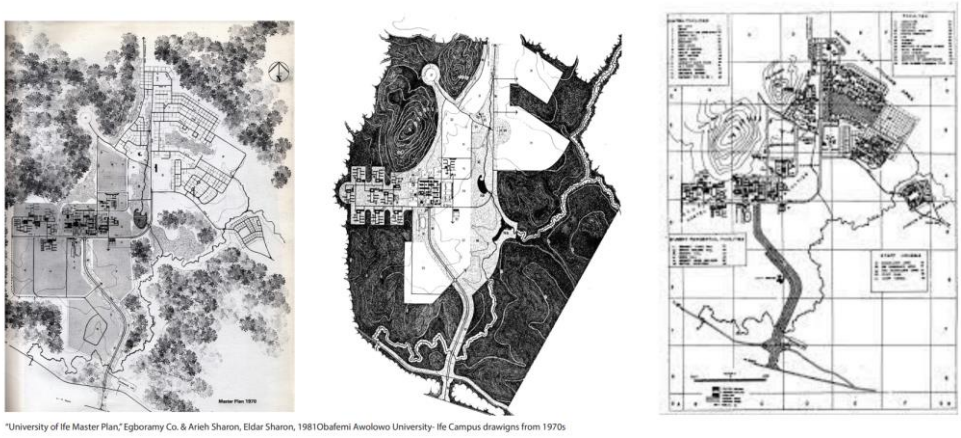

Figure 4.41. The master plan drawings of the Ife Campus. Source: Getty report.

This part of the study focuses on Ife Great Ibadan University in other name Obafemi Awolowo University Campus. In figure 4.41, the selected visual data among the available ones is presented as a trilogy of three master plans. The operational process should be unfolded with textual information like the Cheste cases.

Firstly, the university is granted by Getty Keeping It Modern Project in 2020. Other awarded educational spaces are Amsterdam Gerrit Rietveld Academie (1963), Technische Universitat Berlin (1976), Universidad del Desarrollo (1964), Universidad de Porto by Alvaro Siza (1966), Panjab University by Pierre Jeanneret (1962). The university was designed by Arieh Sharon with the assistance of architects Eldar Sharon and Harold Rubin. and the construction process continues between 1962-1972. The process is regarded as one of Nigeria's premier academic institutions, producing numerous award-winning scholars and researchers. The architectural design incorporates an African sensibility into a European context, effectively emphasizing the university's mission.

In the brief explanation of the Getty Foundation, the university is remarkable since it is a part of a wave of higher education centers built after Nigeria's independence from Britain. Its establishment is politically linked to the new ideals of the country as a new, modern nation. Its architecture is described as merging principles of Bauhaus with tropical modernism. The brief underlines the actor position of the architect in modernism by mentioning Arieh Sharon as a former Bauhaus student. Relatedly, the campus is evaluated as "a collection of structures that foreground functionality and simplicity as well as climate-responsive design principles for equatorial region." The highlight of the brief is how the ornamentation blends with the function. The elements for sun protection are the motifs from Yoruba culture which provides proper ventilation. Also, local elements and geometric shapes rendered on the entrances and façades of the buildings construct an image of successfully blending diverse visual languages.

Figure 4.42. Greeting card of the Ife Campus source: ariehsharon.org

The greeting card which contains the aerial view of the campus first introduces the nature and built environment relation then the masses start to communicate towards the references of elevated rectangular structures of modern architecture. As a greeting card, it is the representation of the new independent state and its intellectual progress. In this regard, it has a cultural, social, and political statement.

After freed from the British colonial regime, the independence of Nigeria reflected to the educational institutions by opening four new universities in four regions. The idea behind is to declare the new, modern state by assimilating the modernist style in post-colonial Africa.[119] In the Western part of the country, the University of Ibadan was already established during the colonial period by a well-known colonial modernist Fry and Jane Drew. [120] The new university is considered as a reaction to the existing with its post-colonial architecture in 1956, four years before the independence of Nigeria from British rule. The design unfolded as an architecture and form of urbanism will rise deeply associated with a set of ideas with international merits, but concentrating the climate conditions, people's behavioral patterns, and priorities of the countries lying beneath the *cloudy belt of the equatorial world*. [121]Abimbola and Babatunde in their article called "Modernism and Cultural Expression in University Campus Design in a Developing Country: A Case Study of Nigeria" support that the notion of the level of embodiment of the modernism in this indigenous context is raised from the design of Frew and Drew.

In the figure, its campus plan is shown. The open-air courtyard is the main core of campus for gathering. The buildings are organized in repetitive and linked manner. In this regard, it seems they are modular and open to development. When it comes to the building volume, the rectangular elevated box of international style is transformed with the sun-shading elements to meet the needs of the tropical climate.

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[119] Ben-Asher Gitler,I. (2011), *Third World Architecture* (Taylor & Francis e-Library,), p.113

[120] For a review of the University of Ibadan Campus Design, see: Jackson, L. and Holland, J. 2014. *The Architecture of Edwin Maxwell Fry and Jane Drew: Twentieth Century Architecture, Pioneer Modernism and the Tropics*, Ashgate, Burlington VT.

[121] Abimbola, O., & Babatunde, E. (2016). *Modernism and cultural expression in university campus design in a developing country: A case study of Nigeria*. Docslib. Retrieved December 4, 2020, from https://docslib.org/doc/8929294/modernism-and-cultural-expression-in-university-campus-design-in-a-developing-country-a-case-study-of-nigeria-abimbola-o-asojo

Trenchard Hall, Kenneth Dike Library, and residence halls on the University of Ibadan campus were considered as evidence of modernist influences.

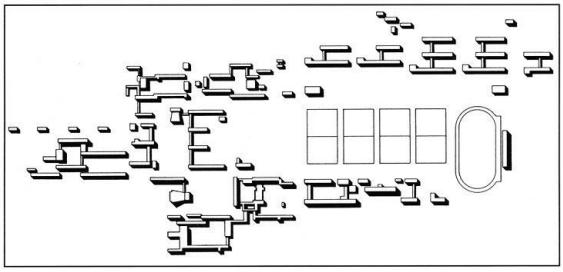

Figure 4.43. Campus plan, University of Ibadan, Nigeria. Source: Fry and Drew, 1964.

Figure 4.44. Campus plan, University of Ibadan, Nigeria. 2950s Source: Fry and Drew, 1964.

Obafemi University is aimed to connect to the local communities. On the other hand, the first impression of Sharon is the land and people were overwhelming. The largest city of Nigeria, Ibadan serves an urban landscape and cityscape with variety of landscape and settlement patterns which tropical forestations is just one of them. According to the professional comment of Sharon, the town and site is the most appropriate, the basic development factors and existing infrastructure will ease the process. Its environmental conditions are also suitable since the high forestation provides controllable humidity and temperature. The town is lively in terms of economic activity and the central location is positive in terms of reachable from other towns and capital.

This project is unique in a sense, architecture, nature, and society are studied together. From the first day, the urgency of planning and programming for the new university, the importance of the understanding the town with its demographical, social, environmental conditions are discussed with support of technical and methodological approaches with their professionals. The government and the architect are aware of the importance of the master plan since they understand that a university is like an urban development. “Always growing, changing, and expanding due to the fluctuations in our contemporary society, and the rapidly developing technology” His approach to master planning is strongly interwoven with conceptual design. He declares that master planning means not only translation of program of the university as a technical activity.

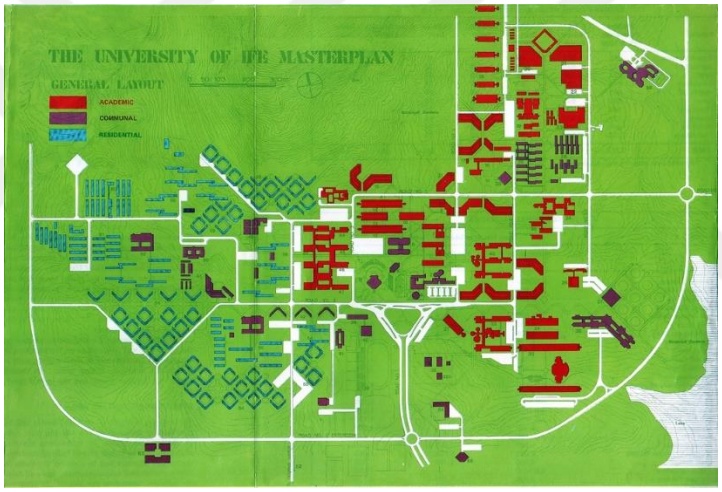

Figure 4.45. Model of the master plan of Ife Campus and schematic model of the second master plan dated 1980 sourceariehsharon.org

> “Master planning means much more: a concept, a thought, an idea originating from the physical site features, its topography, soil, vegetations and the customs and character of its people- and afterwards the fertilization or impregnation of the original concept, analyzed scientifically and supported by meticulous research, and in the end its transition into reality.” (p12.)

The narrative of the design stage of the campus is extensively discussed in the Master Plan Book which is a significant source produced by its architects to understand the

design elements, processes, and requirements. The book is published in 1981 Indicating that the master plan of the university is conducted in accordance with the planning procedures established by National Universities Commission. There are 16 chapters in the book. The information sphere starts from the report of the architect and in the chapters from the general to the detail. Each title shows that the design layers are determinants of the campus planning. As it is indicated in figure, the titles are General Background, University Organization which seems more contextual and general. The Physical Background, Land Development, and Master Plan Formulation are seemed the design is firstly started with understanding the land condition and interpreting from there. Then, zoning decisions appeared, The Main Core, The Academic Zone, The Communal Zone, Student Residential Area, Staff Residential Area, External Areas. Then Landscape chapter is introduced. The Traffic and Roads, Electricity and Communications, Water Supply and Sewage chapter names show that this part is for the infrastructure design as a complementary stage for the sustainability of the institutional and living functions. These chapters cover all functional areas which are in similarity with the layer order of the METU Campus diagram. In this regard, the approach to the design stages is parallel to the METU Campus, on the other hand, this is a general architectural tendency, and it is no innovative product of modern architecture. The innovative part is the integrated, interdisciplinary approach conducted by the governmental bodies with architects. Moreover, its eighteen years of planning and building story, Sharon sees the success of the campus is achieved because of the collective spirit, close co-operation, and the mutual understanding of all individuals, public bodies and the university council devoted.

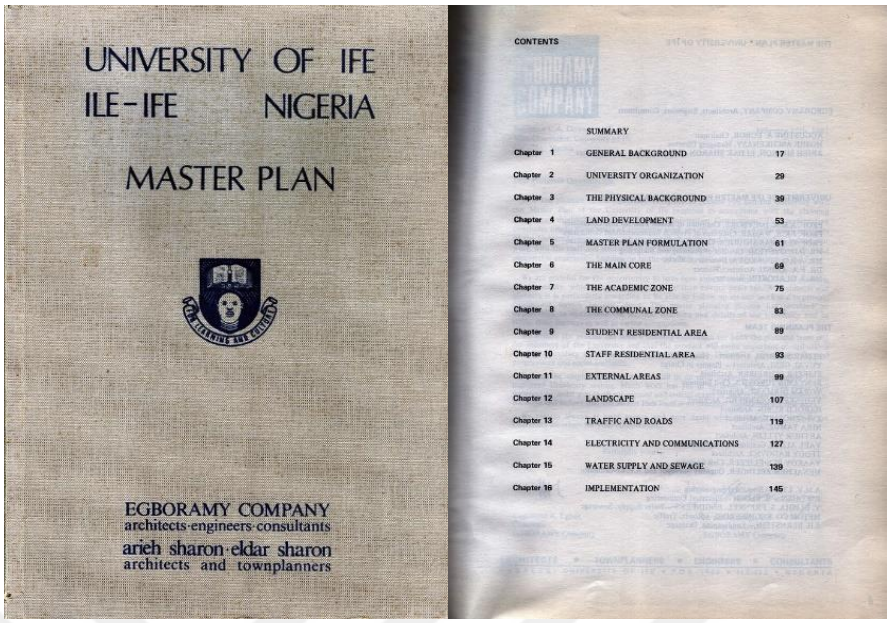

Figure 4.46. The cover page and the content page of the Master Plan book source: ariehsharon.org

Also, the design phase is remarkably entangled with the international references. Arieh Sharon' letter to Professor Onwumechili who was the Vice Chancellor of that time is placed in the introduction part. This letter is significantly important since it sets the network relations of the campus with the international style. Arieh Sharon's piece starts with the title of "Challenge and Reality". After his site visit and the report to the government, several ministers, professors at the future university and advising architects, town planners, and Arieh Sharon sent to a tour to study the plans and programs of British, American, and South American universities. University programs are discussed with deans and professors at these visited universities. Among the visited places, there are buildings designed by Le Corbusier, Gropius, Aalto, Sert, Niemeyer. Also, he names some of the example universities, Harvard, MIT, University of Mexico. It is readable that the tour became inspirational for the architect as well as shaped the expectations of the government. The tour shows that the government sees these places as examples of the needed education system. They follow these examples as guidelines to a novel university.

How his architectural approach evolved can be understood through the biography of the architect. Arieh Sharon who is the responsible architect for the campus of Ife, draws a picture of integrated approaches tangled because he is a graduate of Bauhaus as well as he experienced in climate responsive architecture as a part of the Jewish Kibbutz movement. Kibbutz is an international community in Israel based on agriculture. He is born in Poland in 1900 and immigrated to Palestine as a teenager. The influence of Bauhaus School lays in his introduction the "famous school's concepts of functional buildings with simplicity of design," His design approach on educational buildings started with the dormitories and the physics building at the Hebrew University in Jerusalem, the medical school at Tel Aviv University and the Churchill Auditorium and Library at the Institute of Technology in Haifa. His political network has been very active since he joined to the refugee architects from Germany after Hitler's rise to power and he became the director and chief architect of the National Planning Authority after Israel's independence in 1948. He worked directly with David Ben-Gurion, the Prime Minister. As an architect his actor ship is very active since from 1963 to 1969, he was a member of the International Union of Architects' executive committee. He was also a member of the American Institute of Architects. Between 1965 and 1971, his Israeli colleagues elected him president of the Association of Architects and Engineers. Sharon, in collaboration with Benjamin Idelson, created a master plan for the University of Ife in Nigeria in 1963, which was later implemented. Sharon formed a partnership with his son Eldar Sharon in 1964, with whom he designed a further series of institutional projects in Israel, largely within the International Style. His unique personality is underlined by Bruno Zevi in the beginning of the "Kibbutz+Bauhaus" book:

> "…Sharon as a man, - as pioneer and citizen, as an artist: could one risk separating such aspects or levels of a single, overflowing personality? Of course, here the architect is privileged; behind his forms, however, one cannot fail to grasp the human, spiritual and social aspirations of a people. This is partially true of all architects, because their work is always involved in a

collective context; but for none, or perhaps only for very few others, is it evident in the same degree…” [122]

Figure 4.47. Model of the master plan of Ife Campus and schematic model of the second master plan dated 1980 sourceariehsharon.org

After all the contextual and actor positions are unfolded. The reading of master plan and the models present two design phases of the campus, the zoning is dominant in terms of dividing the academic and residential function. Yet, communal spaces serve the role of blending function. Also, the improvement areas of the site are visible even the landscape, forestation encloses the land. The modular nature of the forms of the buildings are readable with the invisible and dissolved grid organization. The built projections of an angled axis are realized. Again, the residential zone is realized under the guideline of this angular axis. The footprint of the buildings of the residential area follows the grid of this axis. Particularly the residential zone and some parts of the academic zone give references to future development. The masterplans and both models have a visual projection towards a mat structure because of the built density. Even open spaces like courtyards between the academic buildings seem to be part of this megastructure since they are repetitive like buildings and defined by the masses clearly.

[122] Retrieved from www.ariehsharon.org accessed in 24.11.2022 Further about his autobiography see the book: Arieh Sharon: *Kibutz + Bauhaus: An architect’s way in a new land*, Kramer Verlag, Tel Aviv 1976.

More about its design Arieh Sharon states that for the case of "Unife", they embody a basic concept, ensemble. Their goal is to create an architectural unity in which the space, function and character are related to each other. Its physical projection is integration between the core of the university and the academic buildings. The architectural elements are used to sustain this unity in user experience level. Since the buildings are separated from each other, the main link is the pedestrian roads between the buildings. These pedestrians' connections are supported with pergolas, three shaded boulevards, greenery in the total park like environment. In this regard, landscape is the main ground as if it is topological or megastructure layout. Sharon states that "The Architectural character leaned strongly on the physical environment, the total vegetation, microclimatic conditions" He argues that these elements have the main decisive influence on buildings and their relationships between the buildings and with the space. In the core, a piazza is defined by secretariat, library, assembly hall, humanities, social sciences, and education buildings. Residence halls and staff housing are situated far away, considering they should be in a more private part of the campus.

In relation to the climatic conditions, the volumetric organization of the building, the façade arrangements are designed accordingly. For example, the core buildings at the heart of the campus have an inverted pyramidal elevation for sun protection. This geometric design enables a detachment from strong sun radiation and monsoon rains in interior. The interior design is free from this geometrical organization by providing open and free plan for adaptation of any functional requirement. In this regard, the building volume, the facades serve as a shell, and even as an interface.

4.3.3 The National Schools of Art of Cuba

This part of the study is focus on The National Schools of Art of Cuba. The historical information of the campus is discussed based on the conservation management plan

published in 2020 after the Getty grand was awarded in 2018. [123] The information sphere establishes the reasons of these distinct characteristics as the projections of the unique cultural, and political entanglement of the campus.

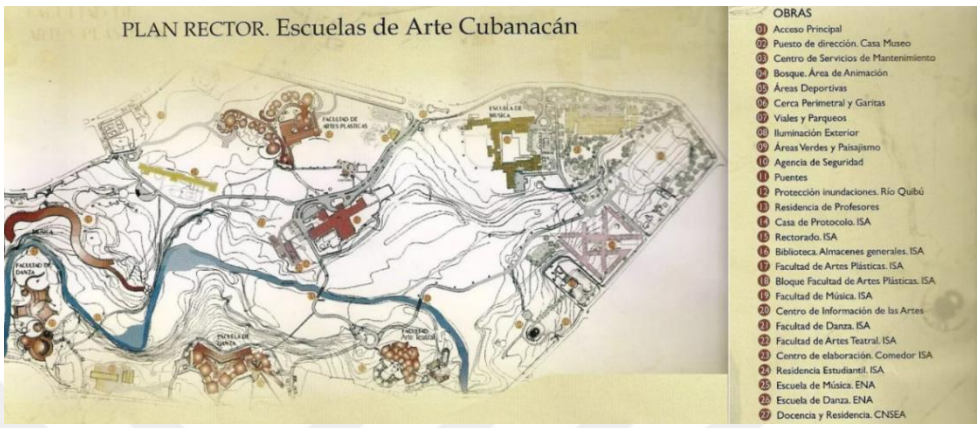

Figure 4.48. The master plan drawing of the Cuba Campus, Source: Getty Report

The National Art Schools were founded in Havana, in 1961. The school is composed of five schools, related art fields: ballet, art, music, drama, modern dance. The location is significant because of the historical and cultural background of Havana which already gained an international visibility with the Cuban Revolution. World Monuments Fund describes the importance of the time of the campus as "born out of the utopian political aspirations of the Cuban Revolution." [124] In the conservation planning, the contextual frame is also underlined as this contextual frame is essential for the National Art Schools, whose contribution is reinforced by their geographical location. Its symbolic value is raised by the extremely unique historical moment, and it could not have the same worth if it is located somewhere else.

The educational agenda of the school and the institutional agenda of the political realm of the time go hand in hand. In the first years after the Cuban revolution, with

[123] Retrieved from https://www.getty.edu/foundation/initiatives/current/keeping_it_modern/report_library/national_schools_of_art_of_cuba D [online] 22.11.2022
[124]Retrieved from https://www.wmf.org/project/national-art-schools [online] 22.11.2022

a massive campaign launched “Literacy Campaign” in 1961, education and culture were the main targets as development areas. In this situation, several military structures were converted into schools and volunteer students went to villages to teach. There are numerous schools found such as schools of medicine, cinematography, art. The National Schools of Art is one of the schools found in this agenda. However, it is differentiated with the political vision embedded to institution. “Following Che Guevara’s internationalist interest, the program of the Schools was extended to other countries, creating an international center open to trainees from Africa, Asia, and Latin America.”

John Loomis, a North American architect (1999) in his book states that the school has a strong political propaganda which is not limited with the country, but also has an overreaching agenda towards the Third World.

> “The political objective of the schools would be to educate those artists who would give socialism both in Cuba and the Third World its aesthetic representation. Moreover, the schools were conceived as an experimental center for intercultural education and exchange. Since the idea and the space were without precedent, it was decided that the architecture, too, should be without precedent. The visionary spirit in which the program was conceived would be symbolized in its design.”[125]

After the political frame is established, the physical space of the campus should be overviewed. The site was selected by Fidel Castro. It is located at the western periphery of Havana in an urban, mostly residential environment. The location in the city is also remarkable, in the Cubanacan district of the Playa Municipality which has the potential to be detached enough from the chaotic nature of a capital city while it is near enough to engage with the historical center. The neighborhood hosts the middle class, which becomes a residential area for students after the construction of

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[125] Loomis, J. A. (1999) *Revolution of Forms: Cuba's Forgotten Art Schools.* New York, Princeton Architectural

the campus. It was envisioned by the architects to integrate this residential area to form an artistic hub active day and night. In this regard, the project has an agenda to positively the surrounding urban patch. Vice versa, the school is considered a public place for the local community.

Figure 4.49. The aerial view of the Cuba Campus, the five schools highlighted.

The 56-ha site is mostly covered in greenery because the Country Club used to as a golf club. The area is an irregular polygon, and the Rio Quibù river crosses by the area. The five schools as five separated structures are located close to the outer border of the site and connected to each other with a pedestrian way which has a reference to ring circulation. According to Loomis expressions on location, the main plain in the center of the site is chosen for the common activities and services like cafeteria, offices. This location has already been used by the golf club as a clubhouse which was built during the colonial period and is now used as the administrative headquarters. The five schools as academic zones are spread throughout the site and each building has its own landscape character. While Modern Dance was placed on a high point, Dramatic Arts was located at the edge of the valley. Ballet school is in a deep gorge. Lastly, Music school occupies a middle ground in the side of a ridge. Each of the five schools is autonomous and has its own unique design, but the five

buildings and park as a whole form a united whole including some pre-existing structures, such as the former clubhouse.

The architectural actors of the school started with Architect Selma Diaz, the wife of Osmany Cienfuegos, head of the Ministry of Construction (MICONS) and later on architect Ricardo Porro took over. His colleagues Vittorio Garatti and Roberto Gottardi participated in the project. The design process started in April 1961 and immediately construction started. In the first stage of the design the group approached the schools as a single complex with shared services, however, the directors of the schools requested different structures for each discipline. Thus, the design of the schools is shared among three architects. Ricardo Porro took responsibility for the general design, Modern Dance and Plastic Art, Vittorio Garatti for the Schools of Ballet and Music, and Roberto Gottardi for the School of Dramatic Arts.

Although their one united model idea on the five schools like megastructure changed. They adopted structural continuity. According to Porro's words, the common ground in this campus is the constructive system which lead the formal freedom and material choice. The structural behavior is chosen as a monolithic structure characterized by a lightweight appearance and thickness. Although monolithic organization seems to be restrictive in formal exploration, the architects elaborated towards a flexibility in movement and shape.

The other determinant of architecture is the material availability. The US embargo significantly weakened the Cuban economy, causing shortages of construction materials. Thus, the decision was to build with local natural resources, bricks instead of concrete. Even this choice is significant since it started to convey the message of the idea of novelty and freedom. Relatively, the construction system is appropriated the material, Catalan Vaulting.

> "The Boveda Catalana or Tabicada, was largely used in Spain, although its origin is generally attributed to the ancient vernacular architecture of the whole Mediterranean area (examples of Catalan vaults can be found in North

Africa, Spain, and Italy). The technique was rediscovered in the XX century by Antoni Gaudí, who adopted it in 1899 for the construction of the Schools of the Sagrada Familia in Barcelona."

This structural system and material give a unique identity to the overall campus, besides the organic plan scheme of each school embodies. The structure system: vaults and domes with it, becomes the image of the site as a dominant element. In the report, it is discussed that the using brick instead of concrete did not lower the desired impact of the campus. Instead, roofing takes the primary attention in the project and the design of the schools is revised in this manner. The architects interpreted the roofing structure to become three-dimensional spaces. The first agenda is to create "architectural promenade" under the roofing structure. This promenade provides a series of functions by alternating spaces to experience, rest, meet, observe, and dialogue, fulfills the schools' social function. Also, they developed roofing as a potential for open space activities. They configure functions like outdoor rooms, paths, viewing areas. For example, Garatti provides walkable roofs to develop a continuity from ground. The dream of the architect is usage of the roof structure for strolling, dancing, and playing in the tropical landscape.

The construction period is also entangled with the design phase and gives references to its usage. In June of 1961, Fidel Castro himself defined the National Schools of Art as "the most beautiful academia of arts in the whole world". Ricardo Porro's Schools of Modern Dance and Plastic Arts were completed in a successful way. On the other hand, in the project of the School of Dramatic Arts there was a continuous change in the plan scheme which resulted in interruptions to the construction process. For the School of Ballet, Vittorio Garatti studied together with Alicia and Fernando Alonso. Among them the School of Music faced multiple challenges in the construction phase. During 1962 construction stopped due to the economic crisis. In 1965, the National Art Schools were declared formally completed. Despite not having been completed, the Schools of Music and Dramatic Art were far from being complete. Interestingly, even 95 % of the School of Ballet finished it was never used. According to the records, the complex was abandoned shortly after, it is kind of

rediscovered in the last decade of the 20th century by taking international architectural attention. There are several restoration and reinterpretation projects conducted by their first architects.

The architects of the National Schools of Art seem to have different network relations to the network of modern architecture. Their life before and after the projects should be traced to understanding their architectural realm.

For example, Vittorio Garatti graduated in Architecture from Politecnico di Milano in 1957 where Ernesto Nathan Rogers was a major influence. From 1957 until 1961, he lived and worked in Venezuela. He later moved to Cuba and stayed between 1961 to 1974. From 1958 to 1961, he was a Professor of Architectural Design at the Faculty of Architecture of the Central University in Caracas, Ciudad Universitaria of Caracas. This university may serve as an inspiration for his architectural practice.

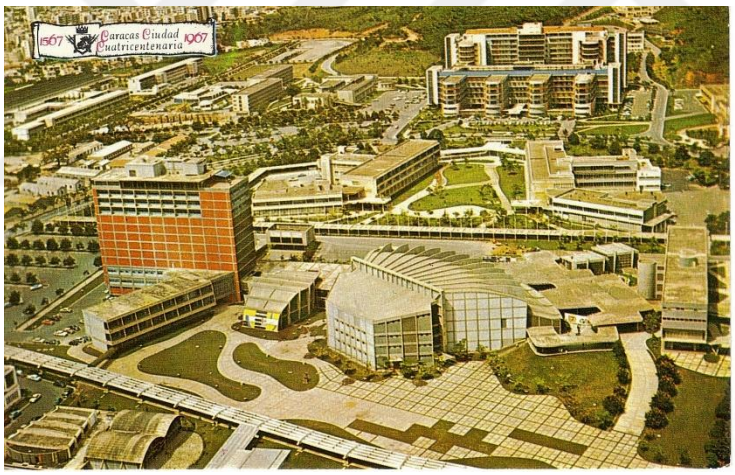

Figure 4.50. Aerial view of the University City of Caracas.

Since its foundation in 1949 it has been known as the University City which supposedly brought into reality urban visions of utopia.[126] It is designed by Carlos

[126] Negrón, Marco; Pintó, Maciá (2008). Jiménez, Ariel (ed.). *Alfredo Boulton and His Contemporaries: Critical Dialogues in Venezuelan Art, 1912–1974*. Translated by Kristina Cordero and Catalina Ocampo. Museum of Modern Art. pp. 55–60, 350–365. ISBN 9780870707100. Retrieved 25 July 2019.

Raúl Villanueva, Venezuelan architect who is known as the master of modern architecture. His architectural work is defined by him as a social act, utilitarian art as projection of life itself. The main agenda of his architectural approach is to revolve human events, instead of formal creation. The project of the university was elaborated as modernist proposal with synthesis of the arts, paintings, muralism, sculpture and landscape. This approach shows similarities in the National School of Art. Also, Villanueva expressed his satisfaction about seeing his architecture is used "full of students walking and studying through a corridor." which the projections of the functional corridor idea can be traced towards the school structure. In 2000, it is declared as a World Heritage Site by UNESCO for being "a cultural asset of exceptional universal value deserving of the protection of the international community" (El Troudi, 2021)

Figure 4.51. Aerial view of the School of Ballet. Photo by Vittorio Garatti, (ISA archive) from the CMP Report 2020

Also, Garatti was an actor figure on the planning of urban and territorial development, he co-founded the Cuban Institute of Physic Planning in 1961. In 1968

he started to develop an urban plan for Havana's city with Jean-Pierre Garnier, Max Vanquero, Eusebio Azque.

Figure 4.52. View of the School of Music from the CMP Report 2020 p.153

From the figures shows the School of Ballet and the School of Music, it is readable that there are two different approaches which directly affect the master plan organization. The School of Ballet has a series of dome structures with a connector element. There are seven domes, the big one is placed on the start point of the connector element. This connector is a circulation element which serves as a backbone of the functional areas with in-between space. The school is perceived as one whole structure with its closed, semi-open and defined open areas. Since the organic form provides definitive elements for landscape; roofs, walls, pavements attached to the main structure.

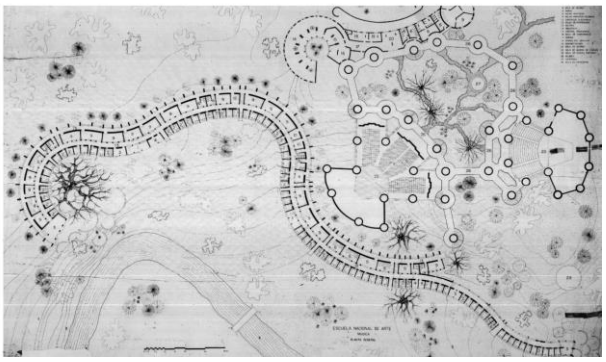

Figure 4.53. Original master plan by Vittorio Garatti. (ISA archive) from the CMPReport 2020

The School of Music is another case in which the organic form is still in harmony with landscape in three dimensions. The hierarchy between the connector spaces, corridors and the main functions seems to be blurred. The promenade is enlarged to cope with the school's requirements. The total structure is perceived as a spine itself. The success of this form on defining open spaces is still working. One big space is attached to the spine is the auditorium which is readable in plan drawing.

Roberto Gottardi was born and graduated from Venice in 1952. He studied with Albini, Scarpa, Samonà, Astengo, and Piccinato and worked for BBPR and Nathan Rogers. He became a lecturer in the Faculty of Architecture in Cuba and abroad Columbia University in New York; M.I.T. in Boston; Graham Foundation in Chicago; University of Architecture of Miami. He was awarded the Vittorio De Sica Award for Architecture by Italian President Giorgio Napolitano and awarded the National Award for Architecture by Cuba.

Ricardo Porro graduated from the University of Havana in 1949. He conducted a postgraduate study at the Institute of Urban Planning at Paris' Sorbonne. He produces a series of residencies in Havana which are called villas. He was forced into exile to Venezuela before the Cuban Revolution in 1958. After the period of the National Schools of Art, he moved to France and became a teacher of history of art and architecture. In his carrier there were many competition projects and studies in educational institutions. In 1994 he was nominated for the Pritzker Prize. The

MOMA (Museum of Modern Art) in New York included original drawings by Ricardo Porro concerning the Havana's Schools of Plastic Arts and Modern Dance in the exhibition "Latin America in Construction: architecture 1955-1980" held between March 29th and July 19th, 2015”.

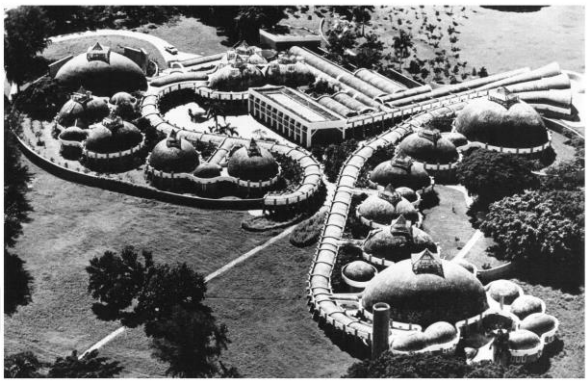

Figure 4.54. Aerial views of the School of Plastic Arts in 1965. Photo by P. Gasparini (ISA archive). from the CMP Report 2020

After an overview of the network of architects in relation to architecture, politics and culture, the design of all schools can give projections towards the main essence of the school, the architectural agenda for raising and celebrating a new society. For example, the figures show the aerial views of the school of Modern Dance and the school of Plastic Art. Both schools have a common element, the architectural promenade which serves as a corridor, in-between social space as well as become a connector element for organization of the main functions. Although the formal aspects differ, this idea is interlaced with all the structures. Among all, the Modern Dance school is the one that has more geometric organization. There are four polygons like dome structures. The connector seems to be the main object itself and ends with more longitudinal space. While the Plastic Art school has a one rectangular complex in the center of its layout. This central area has two arm like connector element towards the two zone of the school. These two zones seem to be generated from the connector element with dome structures. Two zones are differentiated from each other in terms of dimension, the number of domes attached and the way they

connected to the central area. In order to understand the ideas behind it, the plan drawings and interior visuals should be studied.

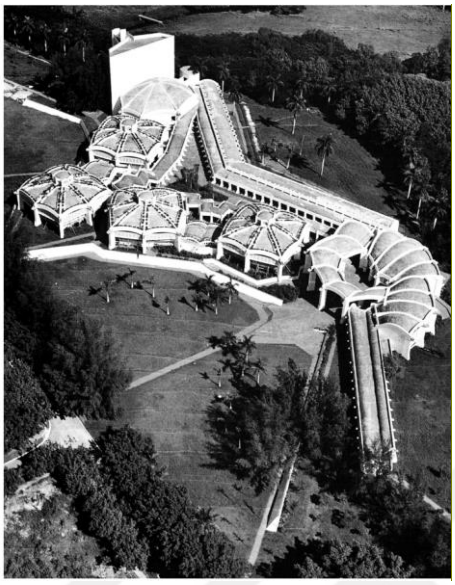

Figure 4.55. Aerial view of the School of Modern Dance in 1965. Photo by P. Gasparini (ISA archive) from the CMP Report 2020

As a result, the main narrative of the campus is interwoven to each schools' architecture. From an overlook of each study can trigger an idea for a total understanding. Since their individual formal characteristic which is in overall continuation takes the public and architectural attention in the publications. There are multiple publications on the architecture of the National Art Schools of Cuba, but the ones put the cover page with its sketch like diagrams is remarkable to show the essence of this campus has linked with the form and the spine element that configure the dome structures, main functions in relation. (Figure 4.55)

One last critical point about totality of the campus is the landscape which is called in the CMP as the tropical park. It is regarded as an essential asset to preserve with its endemic plants. The idea of the landscape is a design element is laid on the approached from the three architects of the campus. Understanding nature is the source of inspiration for design. For the architects, there is a shared agenda about the master plan which is "the five buildings appear perfectly blended with their natural

environment.” It is evaluated as the schools’ buildings have been graciously adapted to the undulated terrain, following its winding course with a perimetral ring road.

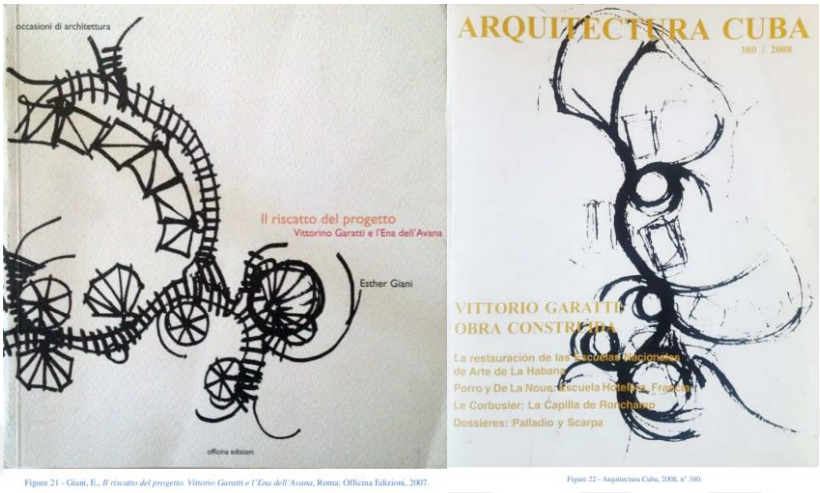

Figure 21 - Giani, E., *Il riscatto del progetto. Vittorino Garatti e l'Ena dell'Avana*, Roma: Officina Edizioni, 2007.

Figure 22 - Arquitectura Cuba, 2008, n° 380.

Figure 4.56. The sketches of the schools on magazine covers. from the CMP Report 2020

For example, there are no diagram, or a master plan drew to indicate the general site decisions. The available master plan from Garatti’s archive shows the overall outcome like defining the built environment on the topographical condition. While the settlement is critically elaborated with the topographical condition. The mapping of the campus depending on this map is challenged to understand the enclosed condition of the campus, since there is no site plan in the scale of covering the surrounding. In Cuba Campus case, there is no residential zone, on the other hand including the surrounding residential town would break the totality notion that modern campus idea has. In this regard, it may be said that the idea of integration with urban fabric rejects the gated society idea.

4.3.4 Universita degli Studi di Urbino Carlo Bo

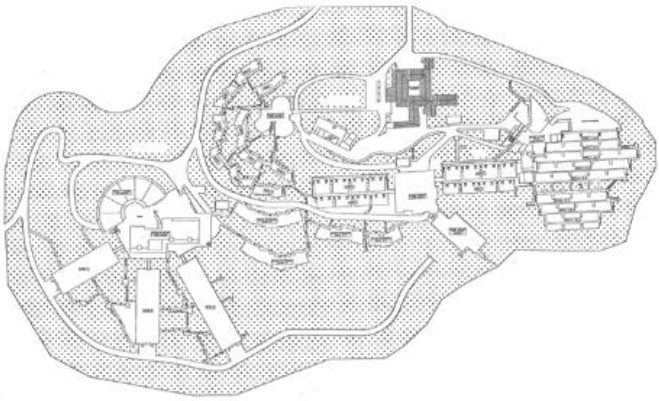

Figure 4.57. The Master Plan drawing of the Urbino Carlo Bo Campus. Source. Getty Report.

The case of Universita degli Studi di Urbino Carlo Bo, known also as Free University of Urbino is a different case in terms of the history of the institution is not directly linked to the campus architecture. The institution is established in 1506 and has been primarily known for its teaching and research in life sciences, humanities, economics, and language studies. The critical turning point towards the modern campus idea is that during 1960s and 1970s the university was successful in purchasing a number of palaces in the old town, which were later restored and used as faculty and department buildings, transforming the town into a "city campus." According to the Conservation Planning Report the vision of the university regards the campus as a city since the student numbers and faculties were gradually increasing. These developments were conducted under Senator Carlo Bo with the growth on size and prestige. Its cultural prestige towards a building contemporary society raised with the following words by the former president of the European Community Commission, Roy Jenkins. “The University of Urbino is an incisive presence in contemporary thought, contributing in original ways to the cultural and intellectual life of Europe”. Even though the idea of modern university had not been developed yet, the idea of shaping society by raising their future citizens as an institutional vision was an expanding idea.

The University has always regarded the "Collegi". The term “Collegi” indicates that university is a fundamental facility that empowers students and professors to fully participate in university life, both on campus and as if the city itself. In this regard, the University Halls of Residences designed between 1962 and 1982 have become a critical example since the 62.000 square meter complex can accommodate 1.500 student. The main design idea behind the complex is to provide a unique life experience beyond residential service. Common and public spaces blend in with each other which creates an active place where the student can “meet informally, study, discuss, relax or simply hangout, prevail over the private ones”. The arrangements of the spaces as shared spaces by women and men are an unusual decision in the time which shows a progressive approach for the intended society. Similarly, there is no division between the areas used by university students and the areas open to the public, inhabitants of cities. This also underlines that the campus should be fully tangled with city life. These two approaches can be evaluated as revolutionary and even avant-garde towards modern city life. The case is a different case in terms of the designing of the functions of the campus as in totality is not applicable, but the logic behind the new construction penetrates the existing university. The notion of modern campus is achieved in the experience of campus and city as a whole.

Figure 4.58. An aerial view of the town Urbino from 1966 source Tosetto, F.2018 in Histories of Postwar Architecture Journal issue 2 p. 10

In figure 4.58, an aerial view from 1966 is shown. The topographic condition and the main settlement axis of the old town can be read. The new construction site was of the campus is located at the right part of the photograph. The new campus was not completed in this aerial view. The distance of the new campus can be recognized with the first building complex faced the main approach from the town.

The architect of the complex is Giancarlo De Carlo who was a core member of Team Ten. The Italian architect should be reviewed as one of the critical authors of the campus idea. Because he created the five Collegi buildings Colle, Tridente, Serpentine, Aquilone and Vela at the Universita degli Studi near the medieval city of Urbino. The Colle as the first realized area is remarkable with facing the complexity of geometry and the difficulty on accessibility. The building hosts public activities, meetings, and conferences. The Tridente serves with its huge common spaces and open spaces like terraces. The Aquilone works as a library connected with study rooms and inner streets. The Vela is the theater building with the newly needed functions of the campus. The complex is deconstructed in a sense with the buildings which are defined in the Getty Conservation Management Report of the university as "function as 'an organism in the form of a city' by repeating simple structural elements that respond subtly to the surrounding hillside topography."

The complex is awarded by Getty Keeping It Modern Grant in 2015 as the architect's projection of modernist architecture. Other granted projects in the agenda of educational institutions are Fundação de Apoio à Universidade de São Paulo by João Batista Vilanova Artigas and Carlos Cascaldi, in 1969, Panjab University by Pierre Jeanneret in 1961, Saint John's Abbey and University Church, by Marcel Breuer in 1961, Sociedade de Promocão da Casa de Oswaldo Cruz by Jorge Ferreira in 1951, Trustees of the University of Pennsylvania by George Nakashima in 1967, Wellesley College by Paul Rudolph in 1958. The main remarks of the Collegi buildings unfold with the close relationship to nature. The architectural element, street, is dreamed by its architect as the realization of the nature relation. It is further elaborated architecturally beyond the function of being connection element. The street idea

transformed into open public spaces flowing each other, extending their transition function to activity place with multiple scenery towards nature.

According to the biography part of the conservation planning by Naomi Miller, Giancarlo De Carlo is a critical actor since he is an architect, planner, teacher, writer and innovator. While he is well known in Italy, as the founder of Team X as a pioneer in participatory architecture, he is active in the international architectural sphere. It is understandable that Team X has an active authorship for the campus design and the architecture of the campus is linked to the contemporary knowledge flow of the time.

> "...was seen as a successful, innovative response to the issues that had been discussed within Team X. The basic motive of the plan was a quest for architecture that respected the human dimension and the human experience."[127]

Miller states that his architectural vision starts with his family since his father is a naval engineer, and he studied structural engineering in Politecnico di Milano. He was part of the anti-fascist circle with Giuseppe Pagano, Franco Albini which shows critical references towards the modernism movement in Italy. As well as Miller records that he is inspired by Le Corbusier. *Le Corbusier's Oeuvre Complète and Alfred Roth's Die Neue Architektur* are two critical sources which stimulate his architectural approach. He studied at the Venice School of Architecture. Further, he became a member of the editorial board of Casabella. He was a participant in CIAM. Among the intellectual circles, he is known as "a modernist who honors the heritage of the past." Miller states that his rooted historical consciousness and total immersion in contemporary society's problems brings him success in architectural sphere. He conducts his design hand in hand with his admiration for technological inventions and the design principles of modernism while at the same time he protested the

[127] Risselada, M, van den Heuvel, D. 2005. Team X 1953/81 In search of a utopia of the present. Rotterdam. NAI Publishers. .

rigidity of the Modern Movement and the International Style. His position against the rupture of the tradition shows the modern campus idea can be achieved without a tabula rasa condition. On the contrary, the permeance supports the city idea with established and ongoing daily life practices. Nevertheless, one issue that should be bear in mind about the political impacts on the campus design. Political sphere of the country, Italy, has not direct agenda on this institution. Thus, the expansion of the campus has a closer relationship with the local political and social spheres than fully breaking the existing and embodied cultural and political modes.

In many universities like Yale University, MIT, Cornell University, and the University of California Berkeley, he was a visiting professor while he was teaching at the University of Venice and Genoa. In relatively, he produces publications in both English and Italian, besides the foundation the International Laboratory for Architecture and Urban Design as a forum for international students meet and develop projects for Italian studies within the consideration of the adaptive reuse. Furthermore, he has many important positions in international organizations like American Institute of Architects, American Academy for Arts and Sciences. Thus, in his architectural education approach, he always considers history in continuation. His approach entangled with modernism but in a critical manner. In his words in 2000 for *Conversazioni con Giancarlo De Carlo* he expressed his style along with the rejection of modern restrictions, so called modern dogmas "I asked that my architecture - like all the architectures that have qualities - is considered as the result of forces coming from many directions: forces that are a real expression of the features of the places and the cultures of their inhabitants". [128] The significance of his words for this thesis study is to show his tendency to understand the assemblage of the project. In his project, the land and the built environment are considered with

[128] Bunçuga, F. 2000. *Conversazioni con Giancarlo De Carlo, architettura e libertà.* Eleuthera.

the actors of the land, with their socio-cultural dimensions which are the part of the network.

According to the notes on the report, for the design of the campus, he had to entangle with the town's urban fabric which reached its summit in Federico da Montefeltro's Ducal Palace. The rehabilitation and conversion of the abandoned buildings into modern facilities are part of his design approach. Different from the other cases of this study, the site is no tabula rasa, or it is completely detached from the city. In a sense, the existing environment serves as a part of the landscape. The turning point of the campus design is started with the University and the City agreed on the importance of strengthening cultural institutions as a whole and agreed to collaborate on the theme of historic center redevelopment and landscape conservation. A new masterplan was commissioned by the mayor of the time and the Dean of the university appointed to the restoration of the Bonaventura Palace to host the Rectory and the administrative functions of the university. The Masterplan was a model for the conservation of the Historical Centre and providing a development area for the outer territory. The University's influential role contributed to its preservation from abandonment and degradation, and ultimately to the forming of its identity through an architectural language inspired by the context. The importance of the work of the university as a city campus is unfold with the words:

> "The work of De Carlo in Urbino has always tackled issues concerning the insertion of a contemporary language within a monumental historical context, both directly through the re-use of historical buildings and indirectly as in the case of the "Collegi", where a new settlement merges with an "anthropized" landscape of particular value and aims at protecting its intrinsic qualities and "historical" legacy." (p.29)

The campus is found important due to the level of engagement with the political, social, and economic situations of the town. It is underlined that it is a rare opportunity for the impact of the physical environment within an architectural paradigm shapes the character of the space not just for built condition, but also by

becoming a driving force of the local economy. The municipality is sensitive as to adopt the role of the guardian of the "Genius Loci" for the town Urbino with the sensible and open model of university. The architect also comments about the uniqueness of the town with the landscape. The pattern of the built environment is successfully and naturally integrated with the topography. The new architecture comes upon this harmony is tried as should be "a seamless continuation with the past".

According to Van Eyck's perception of the university is also critically placed in the conservation planning. The idea of campus as a home for students and the city itself with a chance to live with its history not just surviving unfolds poetically with his words.

> "What makes this building a home and a city (in short the reason of its success) besides the consistent use of the same construction, the same vocabulary, the same materials and the same color everywhere, Is another shrewdness. It is its being two places at the same time: open and closed, indoor and outdoor, large and small, with both individual and collective significance. It belongs to the building to the same extent as it belongs to the area and in fact with this arrangement the building is the area and vice versa." [129]

Also, the integration and complementary thoughts from style to material are elaborated by underlining the void, mass qualities accompanied to functions. At the end his experience glorifies the relationship with nature, landscape and topography.

> "I think I have never seen a building that gives more (from inside) to the landscape of how much it receives, by interiorizing it, articulating it and

[129] Aldo Van Eyck, Il Collegio Universitario di Giancarlo De Carlo a Urbino, in "Zodiac" n.16, 1966

differentiating it: in fact, to being able to receive as much, it would be necessary to make a very long walk in the countryside."

This drawing in the figure also shows how the stepped topography is tamed and the modular parts that attached to the main core of the complex dissolve throughout the land. The street transforms itself to adapt to the topography change. In the following figure it is shown that the street as an element is used for connection of the masses as well as becoming the cells semi-open spaces. It surrounds the main functions as a backbone to sustain the needed and uninterrupted circulation.

Figure 4.59. The streets of the Collegi del Colle source: Blizard, M. 2018

This circulation spaces of the complex as in hierarchy and transformed depending on the physical condition and the function attached to, the architectural quality of the spaces becomes more than the streets but stimulate the user towards a movement with the experience of the topography itself. The form of the complex realized itself almost organic and with reference to the modular mat building.

From that point towards tracing the modern architecture projections is a challenging attempt since the architect also tackled with the insertion of the contemporary language the historical context. In the section of "International influences and links to the Milanese context", the general projections from the international network of modernism are introduced. Ernesto Nathan Rogers is considered one of the important figures for the architect and the process of the campus planning. The country-wise political and architectural situation after the post-war also triggered experimentation on the elements of modern architecture, specifically in Milano. The change and the

project on Milanese context also became inspirational for the architect to evaluate the relationship between past and contemporary.

After all contextual information about the land of the campus and the architect's network relations. The aerial view shows that the main settlement zone is on the top of a hill and the density of the construction areas resolved while the level is getting lower. The hill area is organized along a longitudinal axis where the starting node is underlined with the half circle mass. In that sense the viewpoint nodes of the main axis can be traced in this campus. Also, the mass articulation of the campus shows that this axis transforms into a continuous spine of the campus, in a sense a backbone which cannot be traced in the master plan easily due to the dominance of the topographical change.

Figure 4.60. An aerial view of the Urbino Campus after completion source: Keeping It Modern Urbino Team

On the other hand, the master plan unfolds different mass articulation. The main logic of approaching the campus has tangled with the centrality idea. Although in the design thoughts, the architect wanted a public engagement with the city instead of a gated society, the main approach meets with a complex then the other functions become reachable. Also, the campus surrounding is covered with forest area which increases the isolation of daily life.

The centrality idea has different resonances in each building complex. The building complex in relation to the main approach is surrounded with other functions. By defining two main open spaces in-betwn, the main approach seems to divide into

two. Although the main organization seems to have a main core of the campus and all functions attached to the core, the building complex on the left part breaks this one center organization. The complex located in the left part presents a similar understanding. Their mass articulation is located along a core.

Zooming into other complex areas, different hierarchical mass articulations with central organization unfold. Colle complex reveals itself as a central organized module attached to the core building. Thus, the idea of modular and continuous spaces is studied with the central organization in different functions. Moreover, the mass articulation of these complexes shows that modules are altered by fragmented or linear continuations along with the topographical change. The in-between spaces are also studied in the figure-ground level after the topographical concerns.

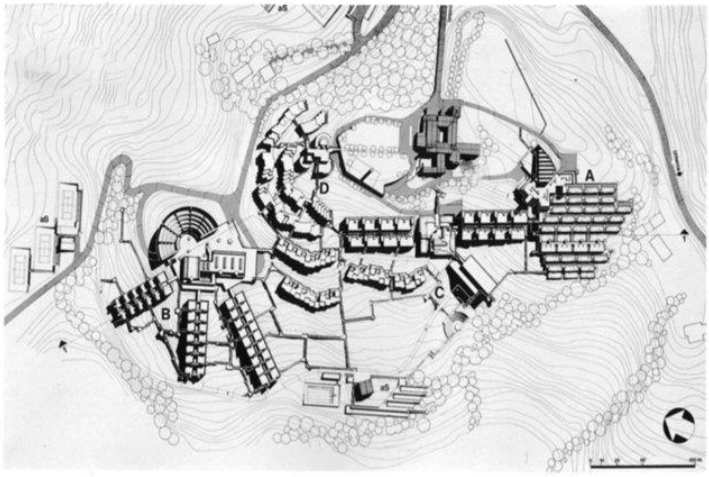

Figure 4.61. The Master Plan Drawing of the Urbino Campus source: Getty report.

There is no total grid taming the land, yet for each complex there should be discussed a fractal gridal articulation. In this regard, the stripes can be studied. Also, ring circulation is studied in two levels of the masterplan. The one is located in the core and realized as a full circle, then the second one encloses the campus but in the lower part of the topography resolves in a sense. It became really detached from the functions. In a pedestrian scale the outer ring circulation can be traced in the edges off the buildings. In relation, the street idea can be studied towards an informal function, backbone realization.

CHAPTER 4

CONCLUSION

The main methodological motivation of this research is to find an architectural tool that maps modern campuses with a narration of their network. This tool is called mapping modern campuses which should be operational on knowledge production and representational level.

Firstly, the mapping trials on different mediums show that the research process and processing the information should be free from software limitations. Because any software interface puts another layer on the knowledge production and eliminating its actor aspects could be problematic. In this case, any architect/researcher would prefer to have control over that layer. In the scope of this study the software use is excluded from the mapping modern campus process starting from the constructing of a visual definition of modern campus but for actor network relationships, the software is used as a complementary tool for revealing and simplifying interrelations. Still, it can be further elaborated with the experimentation on multiple software interfaces for visual production, but it would need a different theoretical and methodological layout.

In this regard, both theoretical and methodological studies are carried out to explore the possibilities. Theoretical framework is enriched by the historical and contextual readings such as situating modern campuses in relation to the modern architecture particularly in the Post-war period between 1950s and 1970s. Understanding the image of modern architecture and the representation of a modern campus in that period are enhanced with exploration on representation techniques. Because they are regarded as abstract machines by Deleuze, their capability of processing information and opening a ground for gathering different information pieces to visual production are studied with the diagram of METU Campus.

The primary interpretation of the study is to provide a guideline for parallel reading on modern campuses. With a cyclic task on a diagram, design tools with respect to a specific actor, architect Behruz Çinici opens a point that can be interpreted to find network relations. The study evolved as the deconstruction of the METU Campus diagram to retrieve the design layers results in a reconstruction of the same diagram with its architectural network interpretations is reviewed considering its unique assemblage. After this stage textual and visual knowledge starts to correspond to each other. It culminates in the architects' own consistent visual interface.

The four campuses are thoroughly researched as examples of modern campuses in different regions with unique circumstances, and their assemblages are interpreted in order to comprehend the terms that shape campus architecture. The historical information about the campus cases based on their Getty reports the projections are examined using the available visuals, particularly aerial views, and master plans. The diagram tools derived from Çinicis, the architects of the METU Campus, are embodied in reading of the historical information of the cases. These actor-based design tools bring a limitation but also a control point over the reading of the cases. Since, the tools can be linked with greater architectural relations and approaches.

Throughout this mapping process, the main concern is to explore whether modern approaches whether are traceable or interpretation needed as an architect. The diagram-based mapping trial of the cases is elaborated with the actor relations. The main purpose is to read modern approaches as a troop of modernism within the spectrum of similarities/dissimilarities, continuations/epistemological breaks, and anomalies.

As a result, the study is integrated from beginning to end. All content-wise questions of the study; modern campus, modern architecture, the design stages in this paradigm, the visualization practices as an architectural thinking, and the interrelation between modern society and architecture are always reflected to the methodological discussions of the study. In this sense, it serves as a total frame towards modern architecture network which cannot be concluded due to the lack of

a complete information sphere. One of the main challenges that remains constant in this study is the need for an interdisciplinary approach to process information in a variety of ways. In particular for case studies, to understand the assemblage genuinely to project to the diagram ground requires an extensive work starting from the list to the parallel reading and ultimately to the mapping ground which it can be only fully managed with an interdisciplinary teamwork. In this regard, mapping trial and research process had to be selective and limit the data set in a consistent way.

Throughout the thesis study, the modern campus network as a sub narrative of the network of modern architecture is continuously interpreted, examined and elaborated. The mapping process starts to unfold itself as a design by research and research by design cycle to fulfill the research questions of the study. This complementary act towards the architectural knowledge production of the study is challenged by firstly with the definition, then application on cases. One further stage could be testing the definition with the bulk list of campuses and conducting trials of diagram construction for each case. Because the diagram construction cannot be conducted because of two reasons. Firstly, the level of interpretation of the author while constructing a diagram of a selected case which is a unique assemblage cannot be fully embraced. Secondly, the author layer in the constructed diagram can be the representation of the selected campus case. Even the necessity of overviewing all campus cases can be questionable for the final statement of the modern campus network. In this sense, the selected cases operate in a close circuit by acknowledging the given and processed data. It is similar to Newman's map which is legible as a finished product. The ultimate expression of mapping modern campuses with five cases would not be same with more than 150 cases which is modern campus network is a part of the network of modernism and carries projections from modern society to architecture and vice versa. The architectural reading of these projections can be achieved by working on a series of diagrams and diagrammatical mapping.

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