VOLUME DEFINING ARCHITECTURAL ELEMENTS IN THE MIDDLE EAST TECHNICAL UNIVERSITY CAMPUS

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ABSTRACT

VOLUME DEFINING ARCHITECTURAL ELEMENTS IN THE MIDDLE EAST TECHNICAL UNIVERSITY CAMPUS

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This thesis is an archival effort on the METU Campus, which focuses on the ideas of “research by design” and “conservation by documentation”. Particularly, this study focuses on the volumetric aspect of the METU Campus. This is done by proposing a systematic representation and presentation technique on the “volume defining architectural elements”, which consists of recently taken photographs, original drawings by the architects and newly constructed 3D models.

Keywords: Archive, Volume, Middle East Technical University, University Campus, Modern Campus

ÖZ

ORTADOĞU TEKNİK ÜNİVERSİTESİ KAMPÜSÜNDEKİ HACİM TANIMLAYICI MİMARİ ÖĞELER

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Bu tez, "tasarım yoluyla araştırma" ve "dokümantasyon yoluyla koruma" fikirlerine odaklanan ODTÜ Yerleşkesi üzerine bir arşiv çalışmasıdır. Bu çalışma özellikle kampüsün "Hacim" boyutuna odaklanmaktadır. Bu, kampüs içindeki "hacim tanımlayan mimari öğelerin" farklı temsil biçimleriyle arşivlenmesi ve sistematik bir şekilde sunulmasıyla yapılır.

Anahtar Kelimeler: Arşiv, Hacim, Orta Doğu Teknik Üniversitesi, Üniversite Kampüsü, Modern Kampüs

To my grandfather

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CHAPTER 1

INTRODUCTION

This thesis is an outcome of an ongoing project initiated by the Getty Conservation Institute Keeping It Modern and interrelated graduate courses that Ayşen Savaş conducts at the Master of Architecture program at METU since 2016.[1] These courses puts emphasis on re-presentation, critical interpretation, history and research by design, and utilizes the Middle East Technical University Campus as the subject of study. Throughout these courses, the aim is an intellectual and architectural production on this subject with said principles, which resulted in many exhibitions worldwide and many graduate studies. This thesis is one of these graduate studies. This study represents and presents certain aspects of the METU Campus and positions itself as an archival effort as it aims to carry the idea of "Conservation by Documentation", which occupies a central position in Ayşen Savaş's studies on the METU Campus.[2] This thesis underlines the defining elements of "Volume" in the METU Campus' built environment, a term that was discovered and worked on and

[1]These are Arch524 Architecture and Different Modes of Representation, Arch505 Advanced Architectural Design Research, Arch571 Directed Studies in Environmental Design and lastly Arch 723 Advanced Architectural Design Research II. It also has benefited from the outcomes of the exhibitions organized by the same research group between 2016 and 2020. The references in this study are from the syllabuses of these courses, outcomes of which will be published in OverHolland journal by the editorship of Ayşen Savaş and Esther Gramsbergen. Ayşen Savaş and Agnes Van Der Meij, eds., Diamonds in Sahara: METU Lodgings Documented, Ankara: Middle East Technical University, Faculty of Architecture, 2018.

[2] Please see Ayşen Savaş, İpek Gürsel Dino, Sezin Sarıca, Bengisu Derebaşı, Fatma Serra İnan, Şahin Akın (Ed.). "Research and Conservation Planning for The METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici Ankara, Turkey," 2018.
Retrieved from https://www.getty.edu/foundation/pdfs/kim/metu_arch_res_cons_plan.pdf

exhibited through several graduate courses preceding this study. The term "Volume", which was extracted from a comprehensive literature research, replaces the terms space and particularly mass. This listing contains technical drawings by the original architects and photographs and 3D models by the author. This production of representational images are presented in a systematic manner.

Historically, The METU campus is interpreted as one of the Turkey's "second wave of modernization projects in the mid-20th century" which was established in 1956 and since became a significant source of intellectual, ideological and architectural capital for its region.[3] A national competition was held in 1961 for the design of the campus. Following a competition, the METU Campus was designed by architect couple Altuğ and Behruz Çinici and the foundations were laid on the Anatolian prairie in Ankara in 1963. In 10 years, the Çinicis managed to create an architectural totality by interpreting the ideals of modernity in Turkish architectural culture.[4] The university was designed as a total entity and in half a century, succeeded in transforming its immediate environment into an 'ideal landscape'.[5]

1.1 Constituting an Archive

Explaining how archive is thought of in this study is useful in terms of establishing a standing point. Concerning archive, this study barrow the ideas of Michael Foucault. Archive, in Foucault's words, is the system of what can be said, and it is where discourse can find presence by a series of representations.[6] In an archive, these representations can physically or digitally find existence, since anything that is

[3] Güven Arif Sargın & Ayşen Savaş (2013) 'A University is a society': an environmental history of the METU 'campus', The Journal of Architecture, 18:1, 79-106, DOI 10.1080/13602365.2012.751806
[4] Ayşen Savaş, "The METU Campus: A Utopia, a Social Project, a Success Story." Brownbook Ankara issue, 2017.
[5] Ibid
[6] Michel Foucault, *Archeology of Knowledge and the Discourse on Language*, trans. by M. Sheridan Smith (New York: Pantheon Books, 1972), 40-49.

placed in this archival study is implied to be a part of a regularity,[7] underlying the initial design principles, material qualities and social/environmental integrity of the METU Campus. These claimed regularities are then presented in a manner concerning the conservation of cultural heritage.

Constituting an archive represents a significant moment. It occurs at that moment when a relatively random collection of works, is at the point of becoming something more ordered and considered: an object of reflection and debate. The moment of the archive represents the end of a certain kind of creative innocence, and the beginning of a new stage of self-consciousness, of self-reflexivity in an artistic movement. Here the newly constructed regularities of 'a history' slips into place.

Archive is planned and designed to identify certain key questions and issues which will help one to identify what this archive can be said to represent and how one to begin to think of and debate the moment out of which it emerged, in a more concerted way.[8]

1.2 Conservation by Documentation

METU Campus is located in a challenging geography that is contested with continuous social, political and economic conflicts. The research focusing on its conservation has been conducted with the belief that the only way to overcome mass destructions of cultural heritage is education in general and documentation in particular.[9]

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[7] Michel Foucault, *Archeology of Knowledge and the Discourse on Language*, trans. by M. Sheridan Smith (New York: Pantheon Books, 1972), 120-129.

[8] Stuart Hall (2001) Constituting an archive, Third Text, 15:54, 89-92, DOI: 10.1080/09528820108576903

[9] For an extended definition of "conservation by documentation", see A.Savaş, B.Derebaşı, İ.Gürsel Dino, S.Sarıca, S.İnan, Ş.Akın, "Research and Conservation Planning for the METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici, Ankara, Turkey", Keeping It Modern Project Report, (Getty Foundation, 2018), 81.

Thus, this thesis employs the idea of "Conservation by Documentation", and is part of the academic conservation effort for the METU Campus, which continues since 2013. The METU research group has been conducting academic research, executing archival projects, organizing international exhibitions and training academics, experts, technicians and workers on the way to help the documentation, preservation, conservation and the display of tangible and intangible heritage.[10] While producing an academic study, this thesis also aims to add to this conservation effort.

This preservation strategy addresses the functional, practical, physical, technical, as well as the social, environmental and political factors that shaped and later transformed the original design ideas and construction methods.[11] The idea is to initiate a process of archiving in which "archivization" was seen as a way of preservation. In this case, this archiving process is on-site researches with a conceptual framework that focuses on the subject of volume and documenting and curating the findings according to this framework. Documentation here is understood as the first step of the said conservation method, motivated by the desire to uncover and thus conserve the initial design principles of the METU Campus.

1.3 Research by Design

This study employs the idea of "research by design". Documentation, with an aim of conservation, is done with a research by design approach in mind. Because there is a directed process of abstraction from object to representation, which is the tool of

[10] A.Savaş, B.Derebaşı, İ.Gürsel Dino, S.Sarıca, S.İnan, Ş.Akın, "Research and Conservation Planning for the METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici, Ankara, Turkey", Keeping It Modern Project Report, (Getty Foundation, 2018), 81.
[11] Mohsen Mostafavi and David Leatherbarrow, *On Weathering: The Life of Buildings in Time* (Cambridge, MA: MIT Press, 1993).

documenting architecture, this study acknowledges the documentation process as a design process and utilizes design as a research tool.

The possibility of expressing qualitative aspects of a built environment and adding to the existing knowledge through representation experiments is vital for uncovering underlying design principles of the METU Campus.

Practice of architects stretches from natural science to art and that the most important way in which the architect achieves new knowledge is through work with form and space – drawings, models and completed works.[12] In other words, research by design is research that produces knowledge through the architect's tools and working methods - with form and space, drawings, models and other representational mediums. It investigates the research inquiry from the practitioner's methods and acknowledges practice as a mean of gaining new knowledge. It is a material-based research[13], where the thinking is embodied in the production process and is not primarily communicable through verbal communication. Research by design does not assume a separation of subject and object and does not observe a distance between the researcher and the practice. Instead, the artistic practice itself is an essential component of both the research process and the research results.[14]

[12] Ibid
[13] Peter Bertram, Evidence of material difference. Copenhagen: Institute of Design and Communication, (The Royal Danish Academy of Fine Arts, School of Architecture, 2010).
[14] Henk Borgdorff, The debate on research in the arts. (Amsterdam School of the Arts, 2005).



Figure 1. A potograph of the METU Campus in the early 60s

Source: https://archives.saltresearch.org/

This study originates from two graduate courses conducted by Ayşen Savaş in the spring term 2019-2020, which are Arch 505 and Arch 571. Second chapter of this thesis contains a detailed report on this study, which was named "A Volumetric Reading: the METU Campus as a Single Architectural Entity". This chapter reports on how the term "Volume" was first discovered, how and why it became a central term for this study on the METU campus, how it utilizes the "research by design" concept to explore a way to represent "Volume" as opposed to mass. The third chapter contains the list of "volume defining elements" and the development process of this systematic representation and presentation method for this particular study. By developing a systematic representation and presentation for the term "Volume", this study ultimately aims to be an architectural representation study with a consciousness of history, archive and the METU Campus.



Figure 2. METU Campus photograph from 1990s

Source: Salt Research Archives

CHAPTER 2

THE VOLUME RESEARCH

2.1 The Initial Volume Research

This subject of "Volume as Opposed to Mass" originates from the courses Arch505 and Arch571, two of the graduate courses given by Ayşen Savaş in the spring term of the education year 2019-2020.[15] The program of these courses consisted of creating a series of representation projects on the METU Campus to reveal initial design principles of the architects, with focus on the ideas of research by design and conservation by documentation.

2.1.1 Architects' Interview

My research partner, Ege Doğan, and I handled the subject of Volume. This subject was noted to be an important factor in the design of the METU Campus, discovered during the many discussions in the classroom, and adopted by us. An important finding that encouraged us to pursue this subject was an interview excerpt from Behruz Çinici, one of the two Architects of the METU campus along with his partner Altuğ Çinici. This excerpt is as follows:

> *The art of creating spaces between buildings is lost today. We see the building as a positive shape used volume. The 'outdoor' established by this volume with the other masses around is generally neglected. I wanted to do this in*

[15] This course was conducted jointly by two universities, Middle East Technical University and Delft Technical University.

the forum (the alley). I saw a positive shape in these empty spaces and worked on it by using the tension in the volumes…[16]

In this interview excerpt, Behruz Çinici talks about the central pedestrian road, known today as the 'Alley', forms the backbone of the campus plan. Running roughly 1 km through the campus, lined by buildings, it is not only a pedestrian road, but also a recreational and intellectual platform of exchange for the occupants of the university.[17] Çinici Architects conceived these series of large-scale landscapes as a "positive shape". This thesis follows the argument that for this they forgo the "mass" understanding of built environment in favor of understanding the campus as series of connected and flowing well-defined interior and exterior spaces, namely volumes. Thus, rather than focusing on mass articulations it is possible to understand METU Campus through a volumetric reading as opposed to mass. (Figure 3)

However, it was also discovered to be a very evasive subject to represent. Within the scope of courses Arch505 and Arch571, this project evolved into a research to represent volume in architecture while adopting the METU Campus as the research subject. The title of this yet to be published work is "A Volumetric Reading: METU Campus as a Single Architectural Entity"[18]

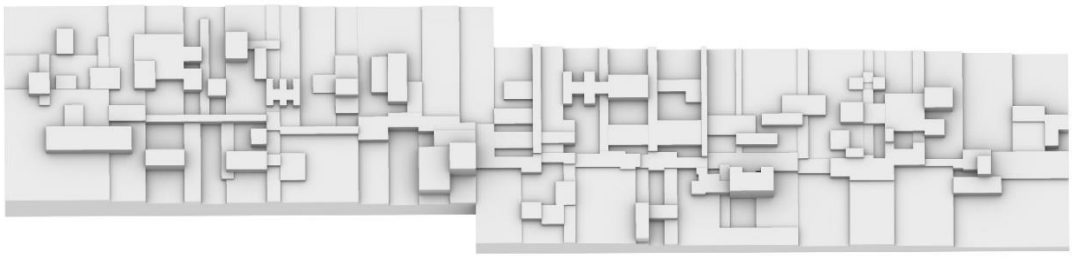


Figure 3. A Mass Model attempt of the METU Campus

[16] Salt Research, https://archives.saltresearch.org/handle/123456789/133?locale=tr, retrieved 23.07.2022

[17] Ayşen Savaş, "The METU Campus: A Utopia, a Social Project, a Success Story." Brownbook Ankara issue, 2017.

[18] Ayşen Savaş is preparing for publication form the architectural journal: Overholland in Septermber 2022.

2.1.2 The International Style

This effort of representing volume is supported by a literature scanning on the term, which led to the 1932 book and MoMA exhibition "The International Style" by Henry Russell Hitchcock and Philip Johnson. Which, at the start of the century, became the definitive statement of the principles underlying the works of 20th Century architecture. This book also features a chapter on volume in correspondence with certain characteristics and tendencies of modern architecture.[19] The full title of the chapter is "A First Principle: Architecture as Volume." To find a definition of architectural volume, it is possible to refer to Philip Johnson's early definition of volume in modern architecture, as they emphasize the new way of conceiving a building compared to previous eras. They state that, volume in modern architecture is essential and can be materialized by a thin shell enclosing a skeleton,[20] as now walls are merely subordinate elements fitted like screens between the supports or carried like a shell outside of them. In the buildings of the past, support and protection were both provided by the same masonry wall. Furthermore, with this understanding of the building, plans may be worked out with far greater freedom than in the past. The piers of modern construction are so slight in section that they create no serious obstruction. Entire facades are frequently cantilevered and the screen walls set some distance out-side the supports. Symbolically the indication of modern plans is reduced to points representing support and lines representing separation and protection from the weather. (Figure 4) Johnson and Hitchcock conclude with the paragraph where they state:

> *The effect of mass, of static solidity, hitherto the prime quality of architecture, has all but disappeared: in its place, there is an effect of volume, or more*

[19] Henry Russell Hitchcock and Philip Johnson, Modern Architecture: International Style, (New York: Museum of Modern Art, 1932): 40-49.
[20] Henry Russell Hitchcock and Philip Johnson, Modern Architecture: International Style, (New York: Museum of Modern Art, 1932): 14.

accurately of plane surfaces bounding a volume. The prime architectural symbol is no longer the dense brick but the open box. [21]

Thus buildings with a skeleton construction can be percieved as plans and sections surrounding a volume. With skeleton enveloped only by a screen, the architect can hardly avoid achieving this effect of surface of volume. Thus, one might argue that this effect of volume is not only desireble, but also unavoidable with the modern construction technieques.[22]

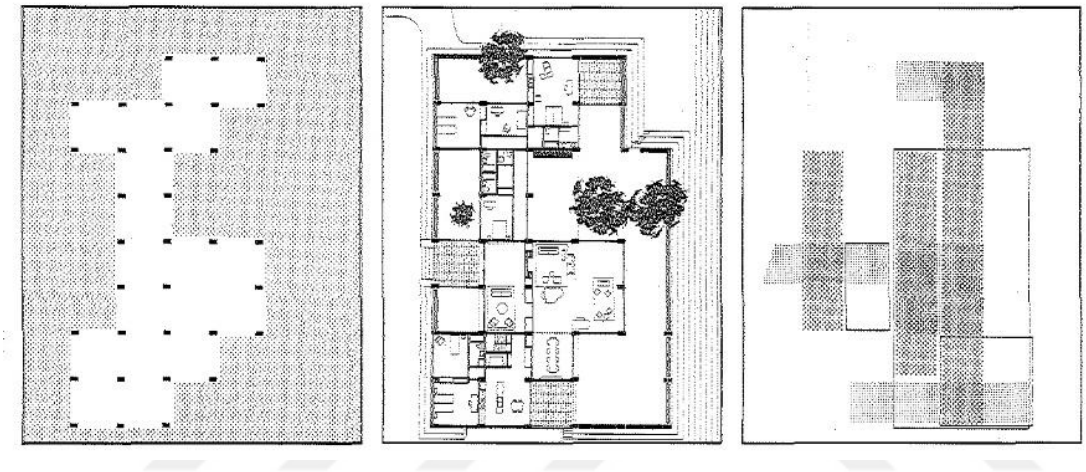


Figure 4. Boissonas House Plans by Philip Johnson

Source: Transparency: Literal and Phenomenal by Colin Rowe and Robert Slutzky

2.2 Continuity of Landscape and Architecture

Johnson and Hitchcock writes primarily about "the singular building" rather than complex built environments such as METU, nevertheless their writings can be applied to the campus. While Çinicis' approach to volume is in line with 'The International Style", they further expand it by conceiving the whole campus. The

[21] Henry Russell Hitchcock and Philip Johnson, Modern Architecture: International Style, (New York: Museum of Modern Art, 1932): 40-49.
[22] Ibid.

METU Campus is characterized by its consistent landscape, which expresses the whole Campus with its interior and exterior spaces as a series of complex interconnected and intersecting volumes. It is difficult to read the landscape and its relationship with the interior in terms of mass, which is one of the prime characteristics of the METU Campus.

Thus, a new method is required to explore and re-present these design principles of the campus. Therefore, volumetric reading is introduced as an alternative analytical method, which expands the International Style's definition of volume defining enclosures.

An enclosure does not necessarily have to be defined by physical surfaces; it can be defined by "phenomenal transparencies" with implications and abstract enclosures.[23] Even though the approach in the METU Campus is much more complex than the International Style's definition, just a skeleton enclosed by thin shells, it can be said that the campus is made of "phenomenal" enclosures that define both the "interior" and "exterior" as positive shapes in a very readable way. [24]

METU campus has a well-defined built environment that extends beyond a skeleton enclosed by a thin shell. Further inquiry on this extension reveals a continuity between landscape and architecture in the Campus. Thus, this definition of volume defining elements in the METU Campus expands to include landscape elements: raised platforms, arcades, retaining walls, entrance gates, pools along with architectural elements. [25]

Employing this idea of continuity aims to avoid any binary opposition when reading the campus, such as figure-ground relations or interior-exterior definitions.

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[23] Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal", Perspecta, Vol. 8 (1963): 45-54.
[24] Behruz Çinici's interview, Salt Research, https://archives.saltresearch.org/handle/123456789/133?locale=tr, retrieved 23.07.2022
[25] Jan Birksted, Relating architecture to landscape, (Taylor & Francis Group, 1999): 1-4.

Understanding the continuity between "landscape" and "architecture" is vital in order to form a critical reading of the campus.[26] This thesis argues that the continuity between Landscape and Architecture in the METU Campus is one of the prime reasons that the spaces between the buildings are read as positive spaces.[27] The landscape of the METU Campus envelops topography of the Anatolian prairie, conceptualizing a three-dimensional grid that informs further development of design.[28] It is the spine of the METU Campus design, not a mere surrounding area for buildings to exist.

Because of this conceptual blur between the architecture and the built landscape, this study favors the specific term "Hard-scape" instead of "Architectural Element" or "Landscape Element" when reading the campus design. However, while evaluating the campus this study excludes any greenery or "soft-scape" as this study names them, when approaching to the subject of volume. The reason for this is soft-scape of the campus is thought to compete with its hardscape, and the volume it defines on an object scale, such as a scale of an entrance gate.

Thus, it can be said that this study evaluates the subject of volume with a reading of the campus hard-scape.

[26] This continuity influences METU on a social level as well. Continuity of landscape and architecture for the METU Campus means the continuity of educational program to the open spaces, which allows a continuity of program to the Alle and other open spaces.
[27] Behruz Çinici's interview, Salt Research Archives
[28] Güven Arif Sargın & Ayşen Savaş 'A University is a society': an environmental history of the METU 'campus', The Journal of Architecture, 18:1, (2013): 79-106, DOI 10.1080/13602365.2012.751806



Figure 5. Campus photo from 1960s or 70s

Source: Salt Research Archives

2.3 Representational Productions for the Initial Research

A building becomes a mass when its exterior is read as a "negative shape", referring to Behruz Çinici's interview. However, when experienced from within, these masses reveal themselves as volumes, which is in constant relation with the "exterior" volumes. This approach is very prominent in the METU Campus that sometimes it is very challenging to differentiate exterior with interior. This is done with hard-scape such as arcades, raised platforms, canopies, eaves, entrance gates, pools, retaining walls and details such as thin, light glass frames with changing scales.

Through these attempts to understand the METU Campus in the initial research, it was discovered that rather than attempting to represent the volume as itself, reading the volume through the above-mentioned defining elements and attempting to conceive a representation method around abstractions of these key elements offers more in terms of a grounded research.

Thus, the intersecting, connected, complex pattern of volumes in the campus are represented in the models by opaque, translucent and transparent surfaces next to their literal model, implying a process of abstraction between these two modes of representation, which undercovers the initial design principles of the subject of study concerning “Volume". These models first depicts an individual space such as a room and then reaches to the scale of the whole campus. This technique aims to perceive the complex spatial qualities of its unique architecture. In this model below, it was attempted to create a guiding prototype to systematize the representation process. In this image, three models are presented within a three-dimensional grid. This first series of models are called literal models, which represent architectural elements. Then a “volume model” corresponding to each of these literal models are presented, represented by translucent boxes. These shapes are defined by the elements of the literal models are enclosed by them. The degree of enclosure is indicated by the degree of brightness. (Figure 4)

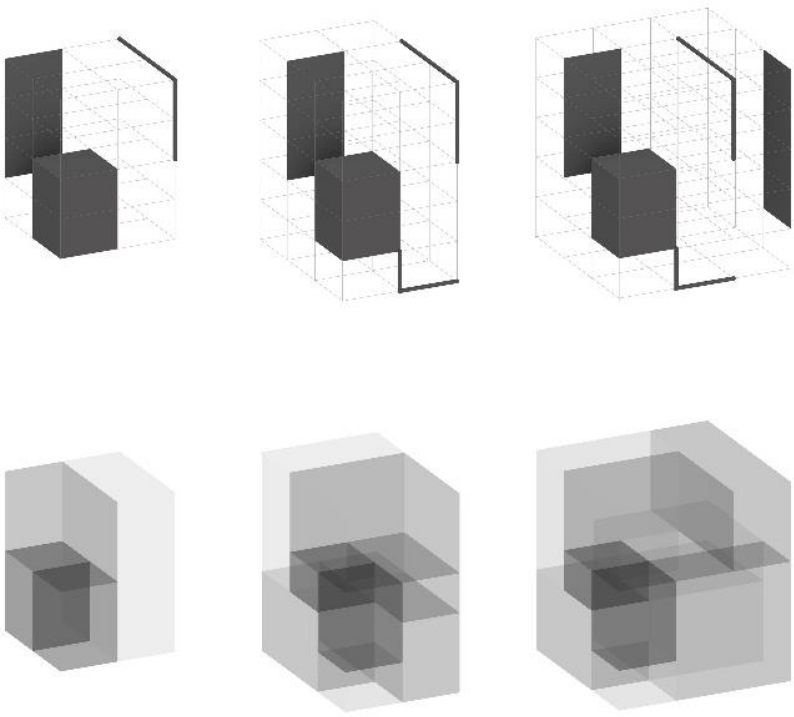


Figure 6. A Volumetric Model, models by Ege Doğan

This model then implemented in the METU Campus, starting from a building block scale, Architecture Faculty F block. (Figure 7)

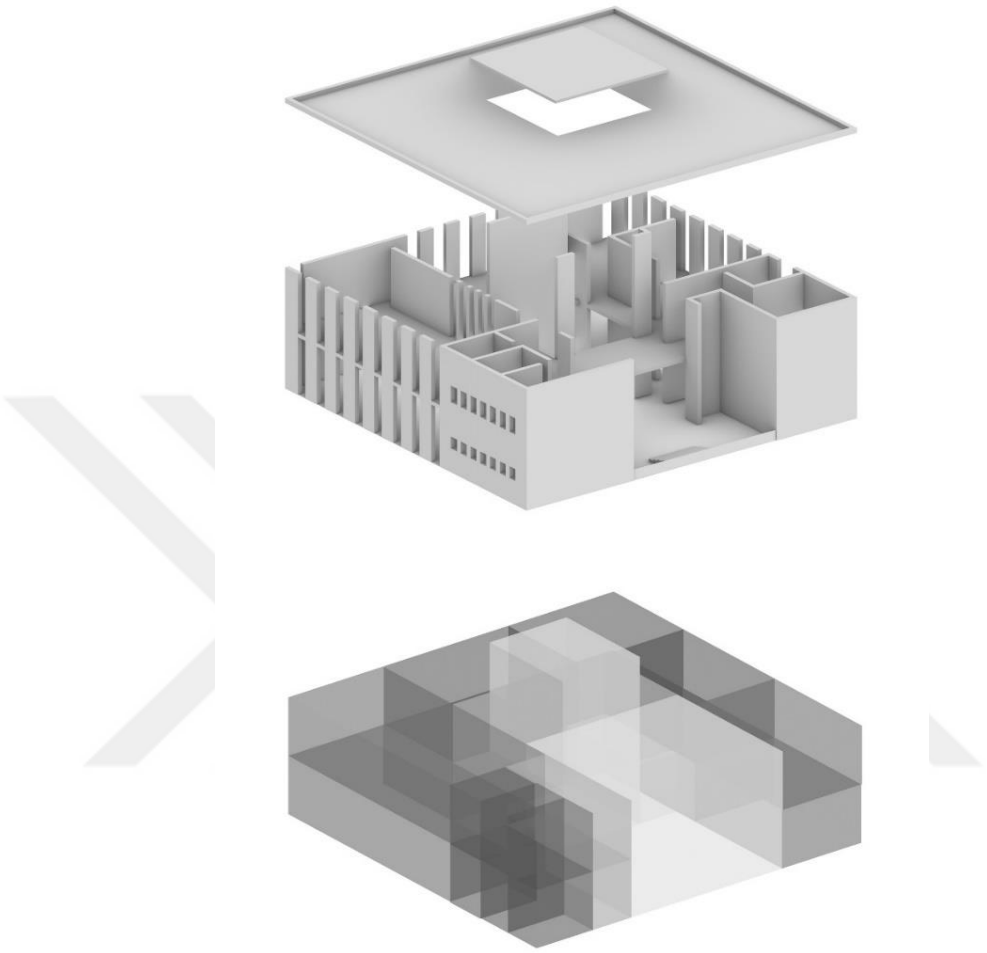


Figure 7. Architecture Faculty Building, F Block, models by Ege Doğan and the author

Then, this model is implemented in larger scales. The buildings selected are the buildings adjacent to the alley, which always featured a series of distinct elements in their relation with the alley at their intersections and in-between spaces.[29] The campus is composed of well-defined mostly cubic building units connected with very

[29] This term is barrowed by Serra İnan's master's thesis: Serra İnan, "In-Between Spaces: The METU Faculty of Architecture Building Complex", Master's Thesis, Middle East Technical University, 2019.

strong circulation and hardscağe elements. This spatial complexity and formal fragmentation include all the building units of the entire campus.[30] With this, the METU Campus reveals itself as an intersecting and interconnected pattern of volumes extending to the alley defined by various architectural elements. (Figures 8,9,10, 11, 12)

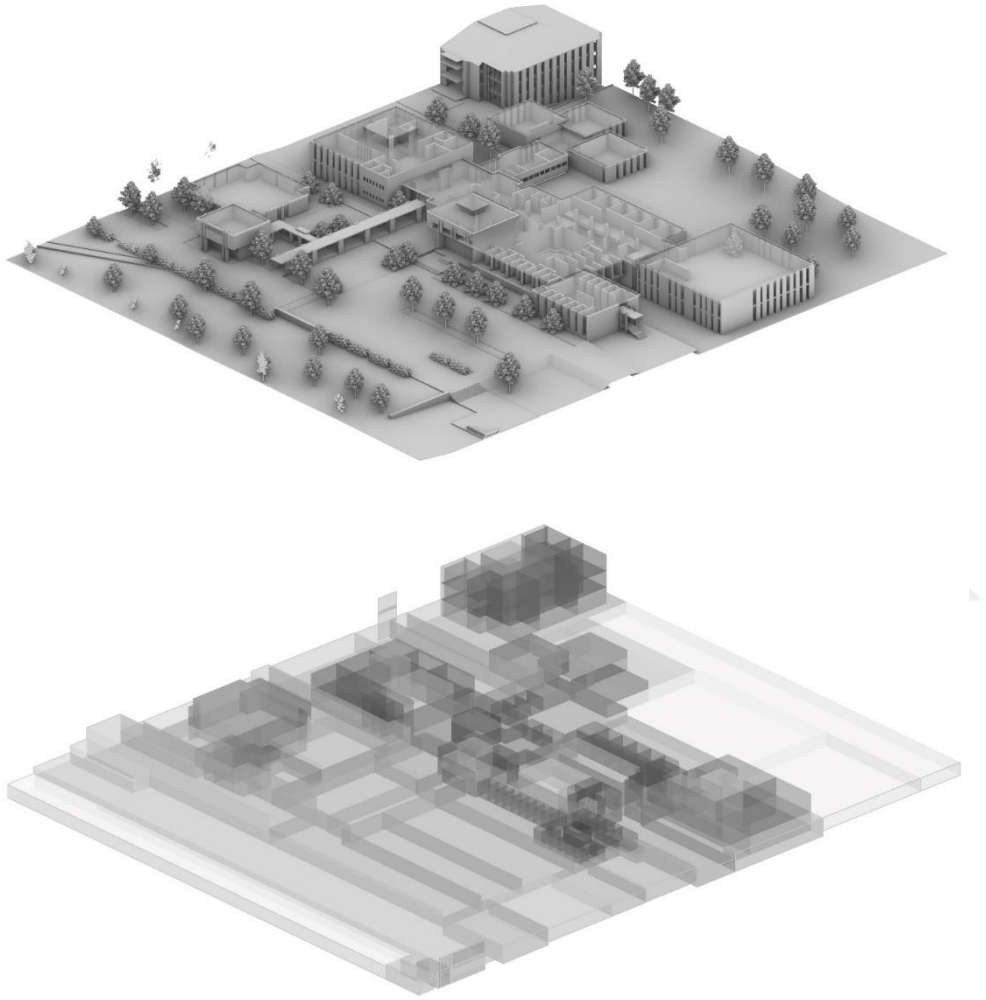


Figure 8. Architecture Faculty Building and the Alley, models by Ege Doğan and the author

[30] A.Savaş, B.Derebaşı, İ.Gürsel Dino, S.Sarıca, S.İnan, Ş.Akın, "Research and Conservation Planning for the METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici, Ankara, Turkey", Keeping It Modern Project Report, (Getty Foundation, 2018): 42.

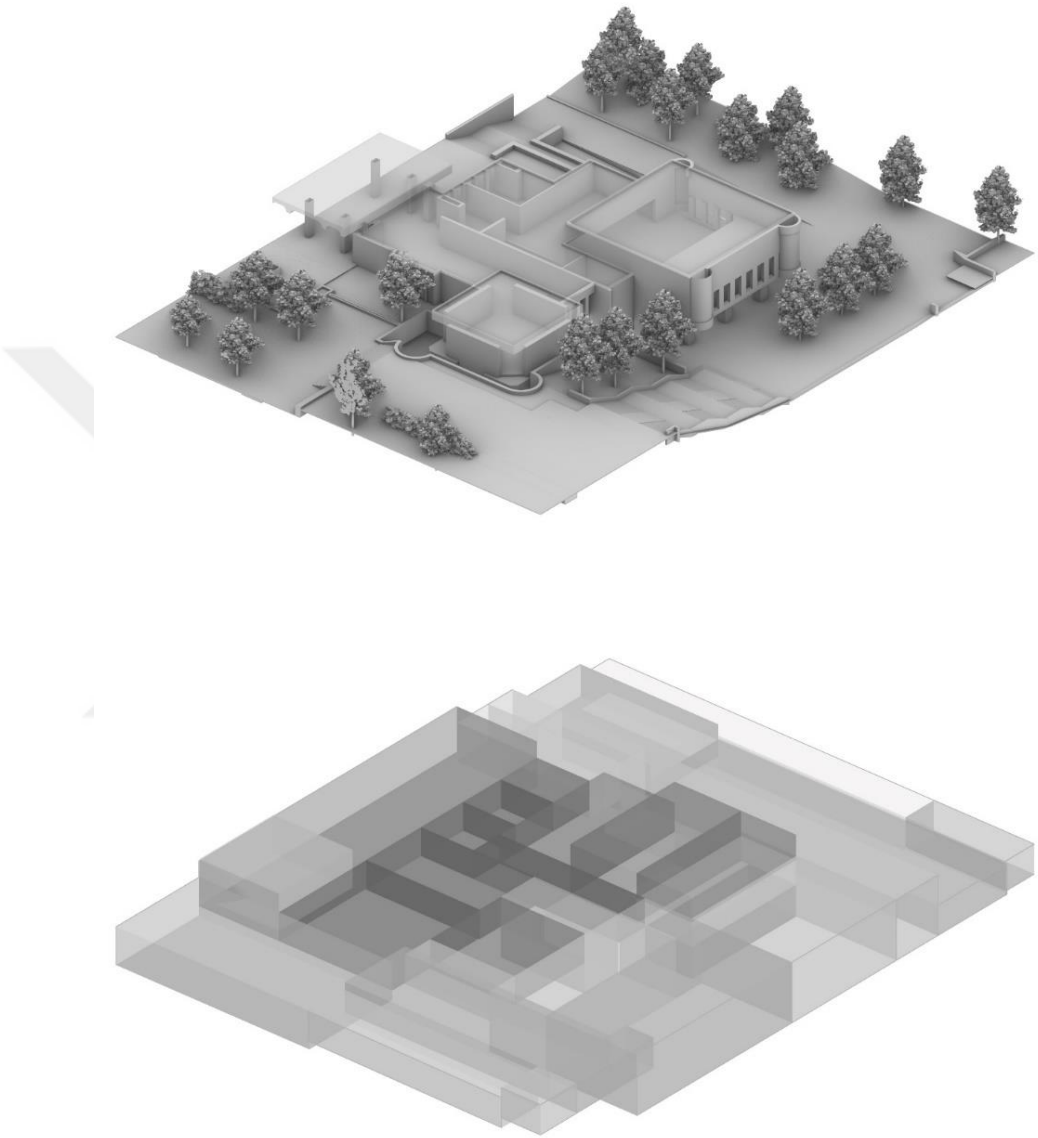


Figure 9. Library Building and the Alley, models by Ege Doğan and the author

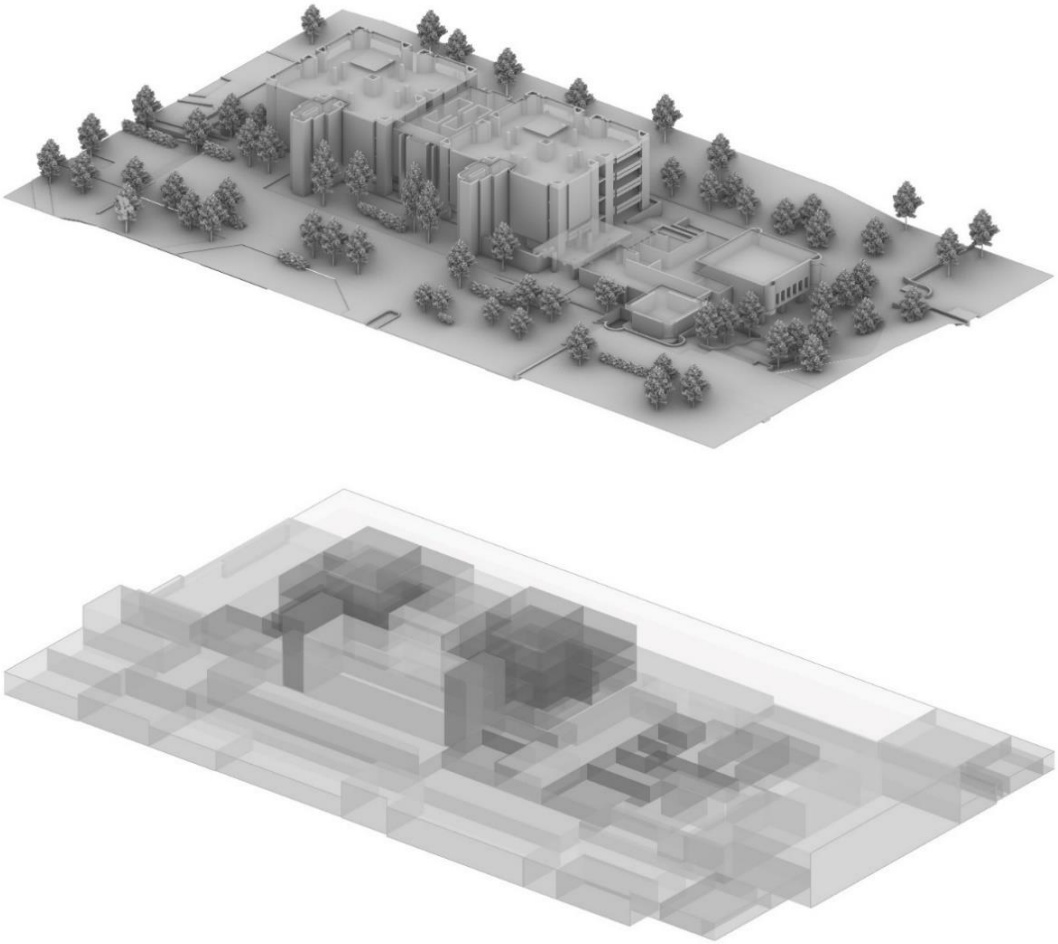


Figure 10. Library entrance and immediate surroundings, models by Ege Doğan and the author

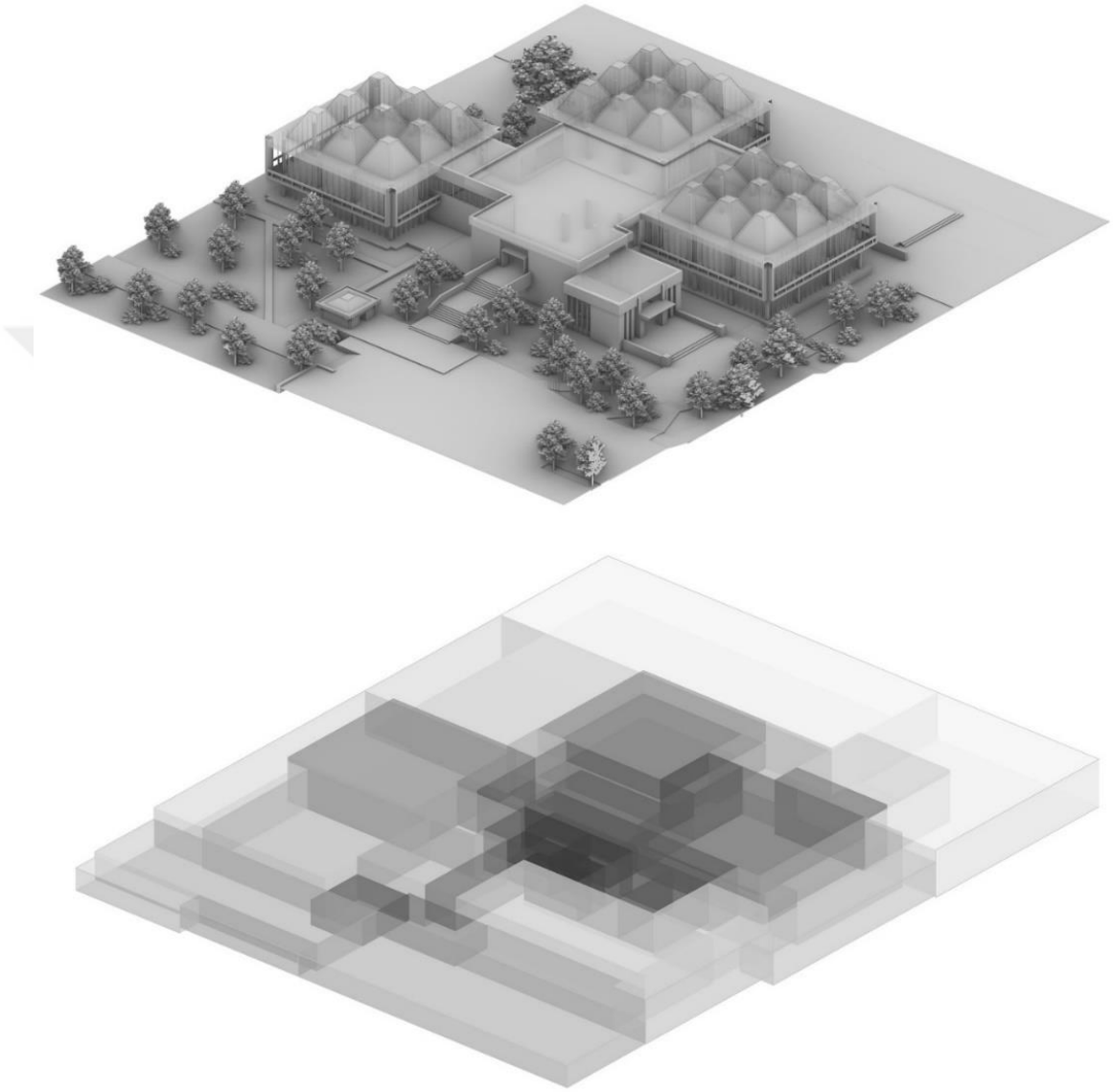


Figure 11. Cafeteria Building and the Alley, models by Ege Doğan and the author

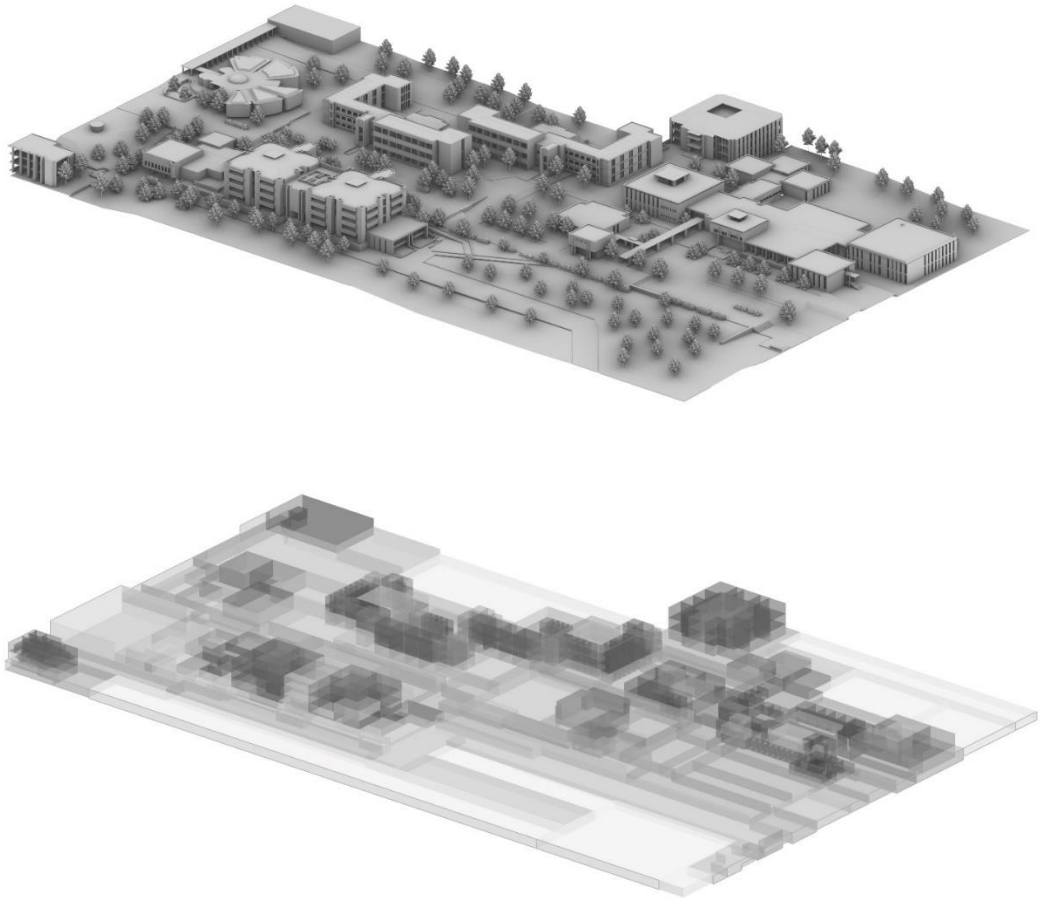


Figure 12. Literal and Volumetric Model, models by Ege Doğan and the author

Although the initial impression of the buildings appears to be individual masses, in fact there are no masses. Going beyond the first impressions of buildings, this reading reveals that the whole campus is conceived as thin surfaces. Implementing this approach to the whole campus reveals an intersecting, connected pattern of volumes. (Figure 13)

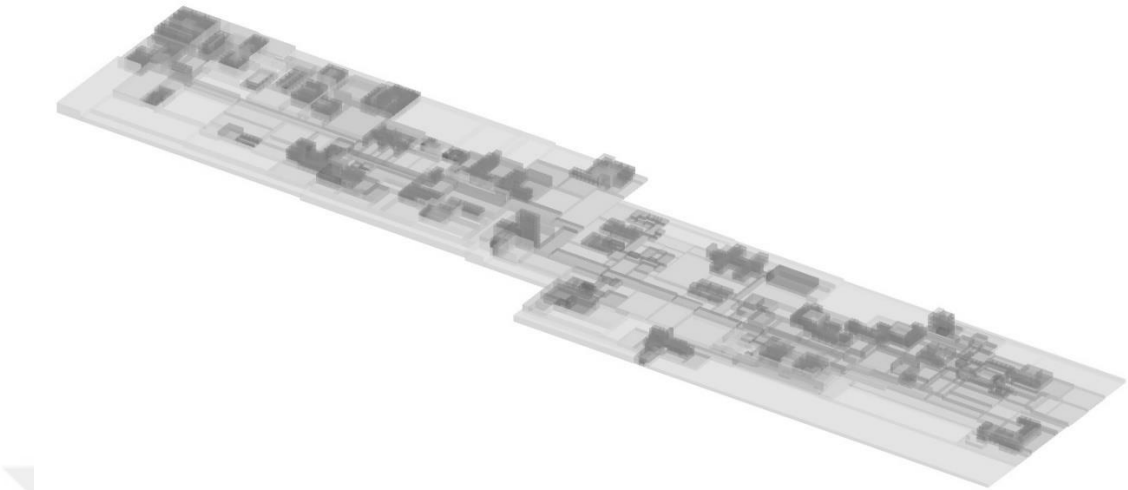


Figure 13. Volumetric Reading of the METU campus, translucent model

This model became the final product of "A Volumetric Reading: METU Campus as a Single Architectural Entity" essay for Arch505 & Arch571.

However, it must be noted that these intersecting and interconnecting spaces of the METU Campus were the subjects of several other studies before, which this project references. The prime of them is the "Getty Foundation Report: Research and Conservation Planning for METU Faculty of Architecture Building Complex (2018)", which is a comprehensive study on the METU Faculty of Architecture and became an important reference point for many graduate studies such as this one. (Figures 14, 15, 16)



Figure 14. The Faculty of Architecture plan, layout and landscape pattern, by Bengisu Derebaşı, Serra İnan, Sezin Sarıca.

Source: Getty Foundation Report: Research and Conservation Planning for METU Faculty of Architecture Building Complex, 2018

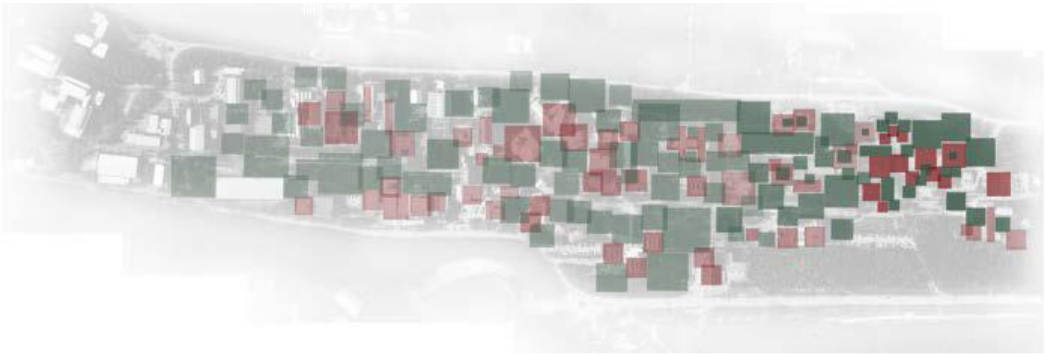


Figure 15. The campus grid and the patterns, by Bengisu Derebaşı, Serra İnan, Sezin Sarıca.

Source: Getty Foundation Report: Research and Conservation Planning for METU Faculty of Architecture Building Complex, 2018

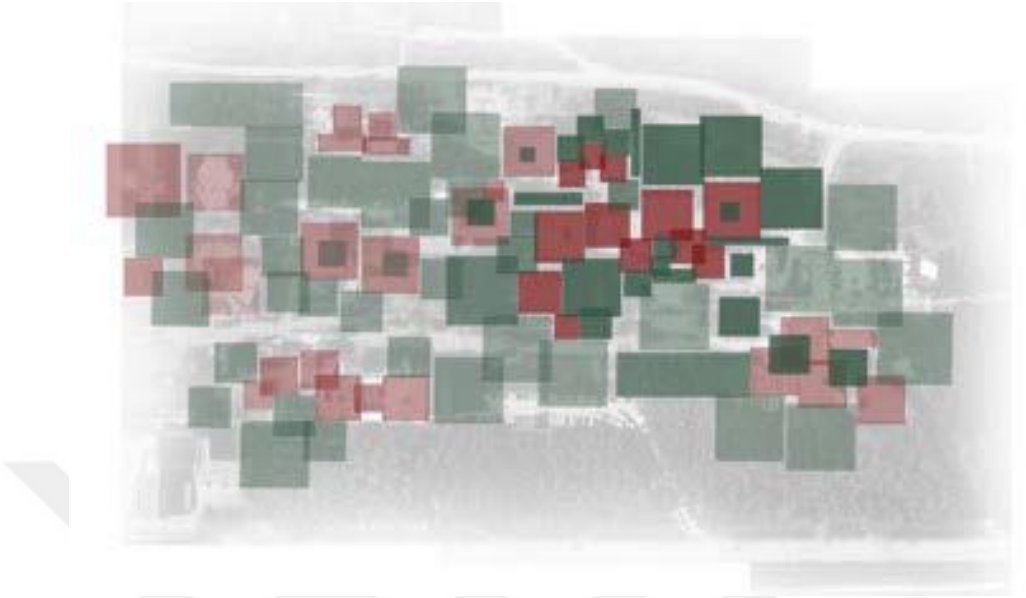


Figure 16. The campus grid and the pattern, by Bengisu Derebaşı, Serra İnan, Sezin Sarıca.

Source: Getty Foundation Report: Research and Conservation Planning for METU Faculty of Architecture Building Complex, 2018

In these images, interior spaces are marked with red squares while exterior spaces marked with green. While this reading is competent with displaying the certain scales and their relations with, it does not inform the three-dimensional character of the campus that envelops the topography by following a three-dimensional grid.[31]

Another method for representing the campus's volumetric structure was utilizing a relief model (Figure 21), which was inspired by Bauhaus' Rudolf Lutz's relief model, and previously attempted by another METU graduate students, Sezin Sarıca, Bengisu Derebaşı and Damla Erkoç in order to represent the campus in a previous

[31] Güven Arif Sargın & Ayşen Savaş 'A University is a society': an environmental history of the METU 'campus', The Journal of Architecture, 18:1, (2013): 79-106, DOI 10.1080/13602365.2012.751806

Arch524 course given by Prof. Dr. Ayşen Savaş in 2018. This relief model later became one of the central pieces in "METU Campus Documented Travelling Exhibition" at Technical University of Delft in 2019, which is an exhibition project hosting many representational productions during many courses conducted by Ayşen Savaş. (Figures 17, 18)

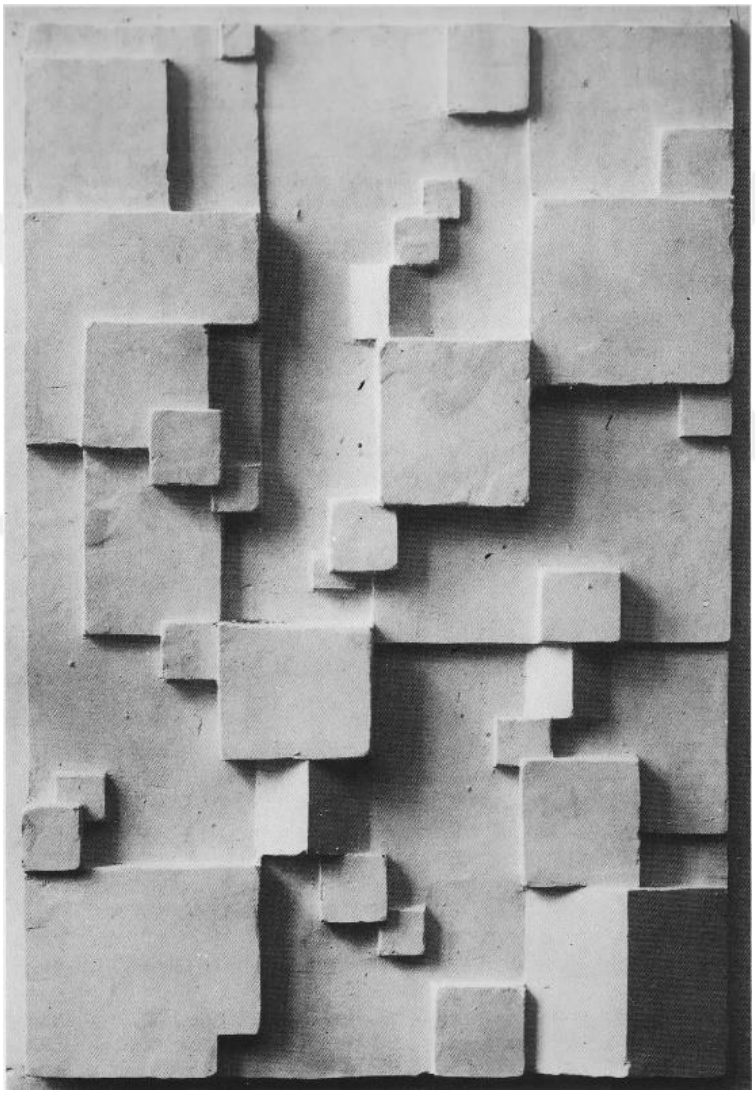


Figure 17. Rudolf Lutz's plaster relief model, 1921

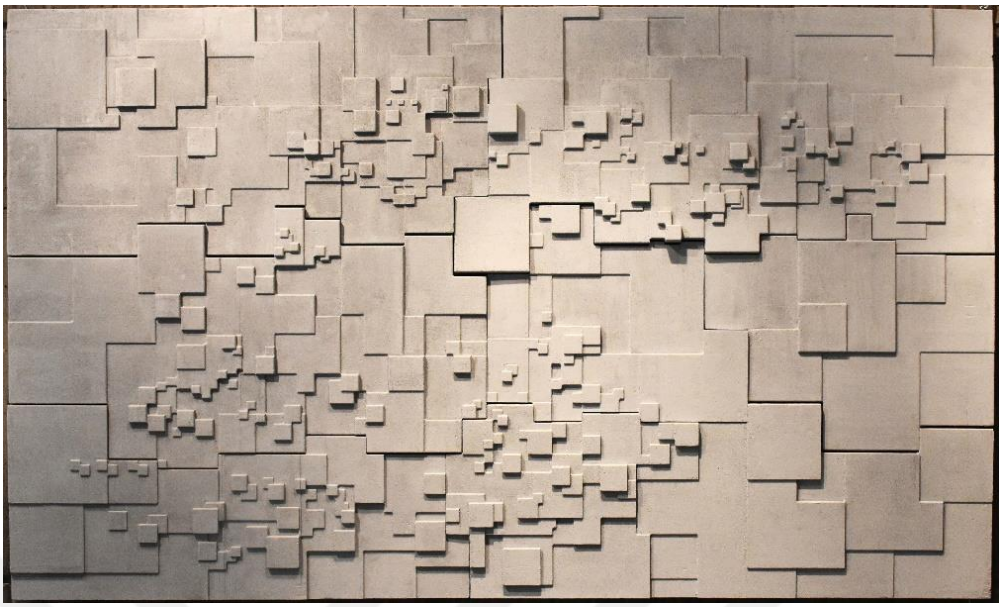


Figure 18. Relief Model by Sezin Sarıca and Bengisu Derebaşı, 2018

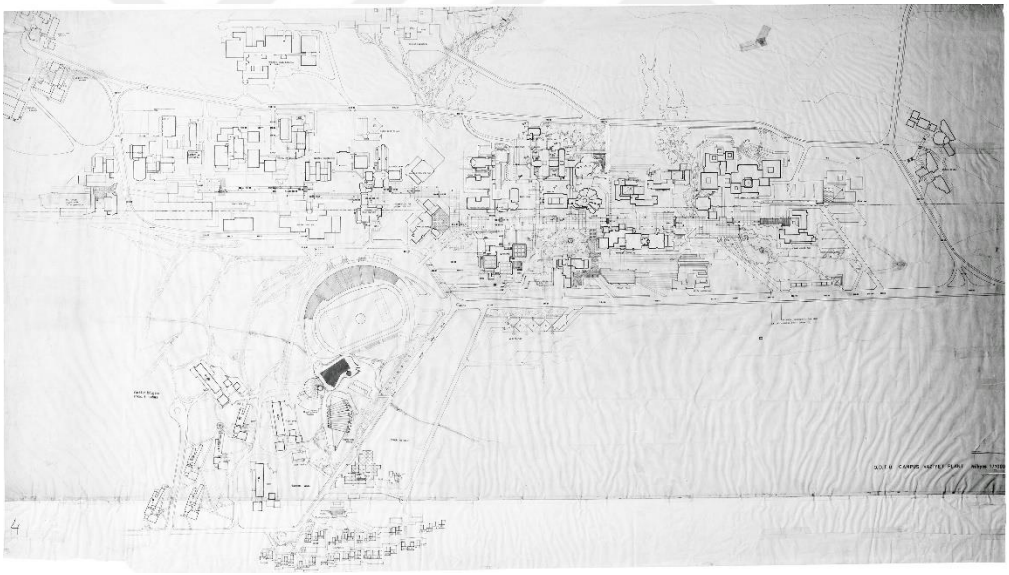


Figure 19. The METU Campus, Masterplan, Behruz Çinici and Altuğ Çinici. Sezin Sarıca's relief model takes references from the METU Campus masterplan.

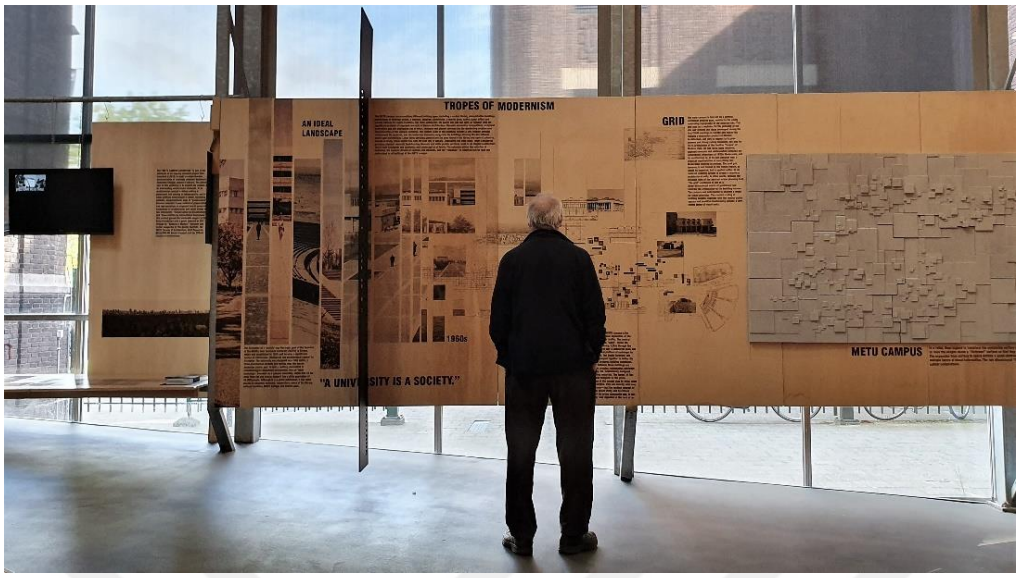


Figure 20. METU Campus Documented Travelling Exhibition. Curated by:Ayşen Savaş Curatorial Team: Bengisu Derebaşı, Serra İnan, Sezin Sarıca. Photograph by Serra İnan, 2019

An effort to represent the intersecting and interconnecting volumetric structure of the METU Campus with no figure-ground inspired a relief model during the research process. (Figure 21)

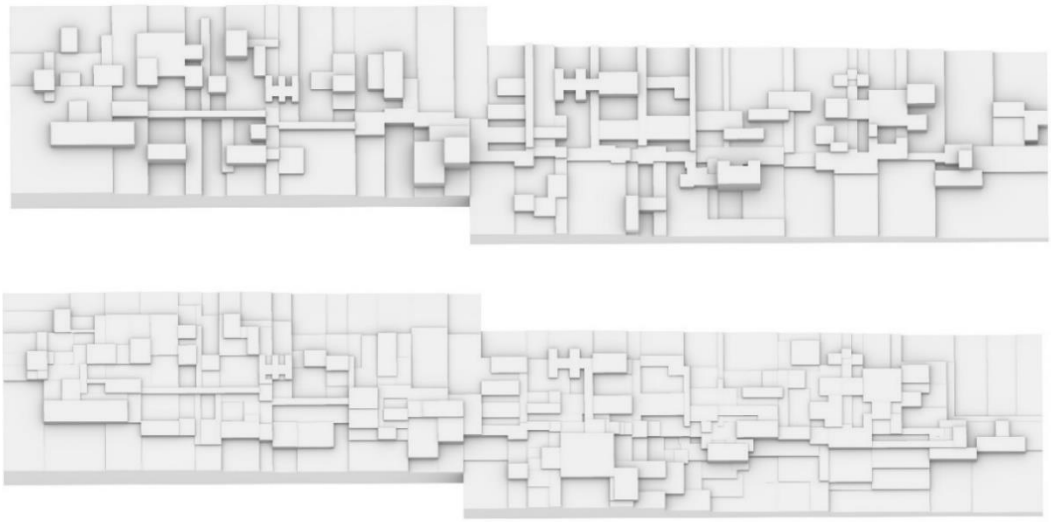


Figure 21. Mass and Relief Model comparison, by Ege Doğan and the author, 2020

The main reason for utilizing such a model was to display the absence of figure and ground relations in the METU Campus, which was thought to imply its volumetric structure as walls are no longer understood as masses but planes with volumes on both sides. This quality is attempted to be represented in the mass model by transforming the defined exterior volumes to masses as well. While this is very much a mass model, it eliminates or alters the figure-ground reading and was a reference point for the translucent model. (Figure 21) The proposed digital models that we prepared were also perceived as mass models. (Figure 13) They can be thought as the translucent versions of the relief models, which with introduction of tone and color it was competent at displaying the changing scales from the alley to building interior. Although these models still have value in displaying some of the design principles both Behruz Çinici talked in his interview and Henry Russell Hitchcock and Philip Johnson written in their book "The International Style", it was more competent at communicating an impression of the idea of open plan and enclosure rather than a detailed volume reading. Incidentally, it was one of the exercises in the classroom to create an open plan of the METU Campus, referencing to the Nolli-Map of Rome, which forgoes the figure-ground understanding of a master plan and presents the open urban spaces and public interior spaces in the same hierarchy to communicate a better understanding of an urban experience. Although this drawing did not find place in the final essay, it was an important exercise on seeing beyond the figure-ground and mass understanding of built environment. It can be argued that "volume" that Hitchcock and Johnson writes about is identical to the idea of "open plan", however this thesis claims that volume and open plan has a fundamental difference. While open plan is a building method and it is exclusively applicable to "a building" , volume is a principle[32] and is not exclusive to the open plan. This is

[32] Henry Russell Hitchcock and Philip Johnson, Modern Architecture: International Style, (New York: Museum of Modern Art, 1932): 40-49.

the reason it is applicable to the continious landscape and architecture of the campus and is a tool to critically evaluate METU.

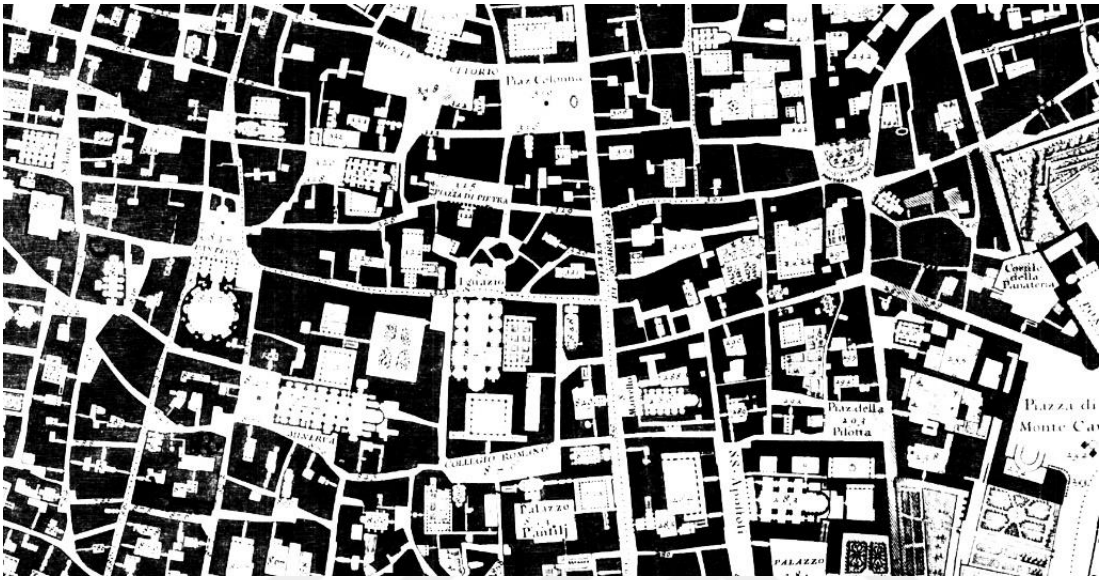


Figure 22. Nolli Plan of Rome

Source: researchgate.net

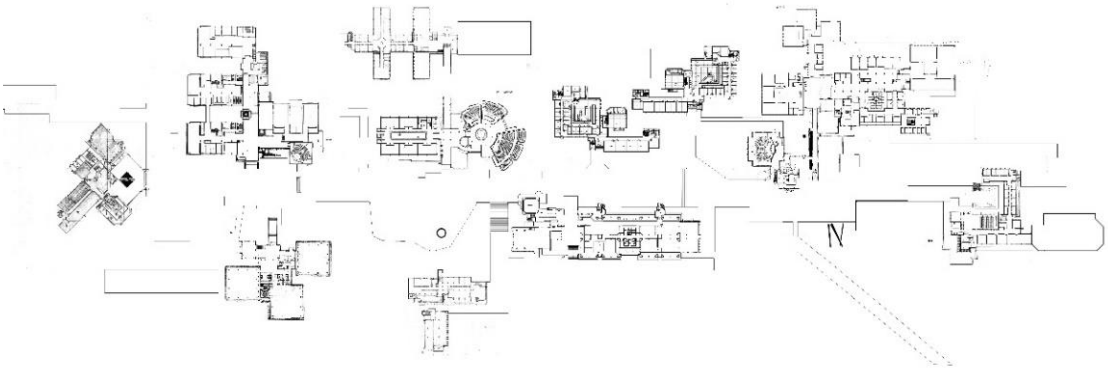


Figure 23. A Collage of plans along the alle, drawings by the Salt Research Archives, collaged by Ege Doğan and the author, 2020

Plans, sections, and any other representational materials that focuses on material qualities, while may be helpful, are inadequate for claiming to directly represent volume. The main reason for this is volume being felt as immaterial and weightless.[33] This evasive nature of representing volume is the main reason this thesis changes its direction and focuses on the individual architectural details and characteristics of "volume defining elements". However, this does not mean the failure of this initial study. On the contrary, it has played a crucial role on defining, deciding and curating of what a "volume defining element" is. Thus, this thesis attempts to continue with this study of volume and the METU Campus with a different but complementary perspective, which is putting attention to individual architectural elements and presenting them in a systematic way.

[33] Ibid.

CHAPTER 3

VOLUME DEFINING ARCHITECTURAL ELEMENTS

This thesis aims to continue this research by evaluating specific elements in the METU Campus as "volume defining architectural elements".[34] This archival study emphasizes the volumes of the architecture of intersections, such as bridges, gates, platforms, arcades, landscape elements, eaves, and more. As discovered in the previous research during the making of its detailed 3D models, these intersection volumes are defined by these intricate hardscape elements consistent throughout the METU Campus.

3.1 Continuing the Initial Research

This category of "volume defining architectural elements" is handled with an expanded[35] perspective, which claims along with being key hardscape elements that envelops the campus topography and makes the previously researched "Volumetric Reading" possible; these architectural elements are also presented in a sculptural way. Ultimately, this thesis aims to define, represent and present these elements in the METU Campus, focusing on their volume-defining qualities as the deciding factor of inclusion in this archival study. The working method consists of on-site studies, photographs, sketches and models that attempted to turn into a systematic representation style. This has led to an extensive on-site research at the METU

[34] "Architectural elements" here is used for both landscape and architectural elements, which is also acknowledged as "hardscape" elements in this study.
[35] Rosalind Krauss, Sculpture in the Expanded Field, (The MIT Press, Vol. 8 Spring, 1979): 30-44.

Campus, investigating architectural elements of the METU Campus with distinct characteristics.

Entrance spaces are especially a very important factor in the METU Campus' individual sculptural and volumetric characteristics, which was handled in various manners. Prime of these are exposed concrete entrance gates with eaves, which can be found in almost every building with various differences and adaptations to its immediate physical condition. (Figures 24, 25)

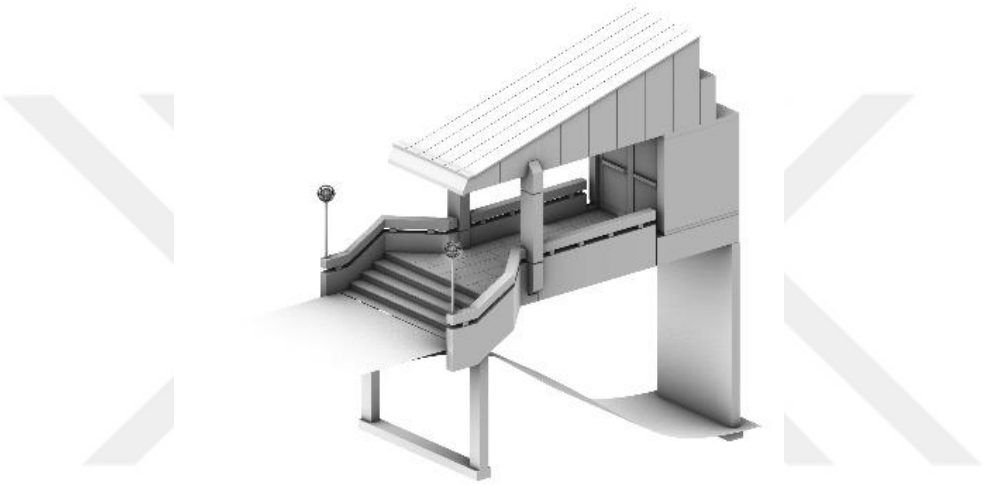


Figure 24. 8th Dormitory Main Entrance Gate. 3D Model by the author

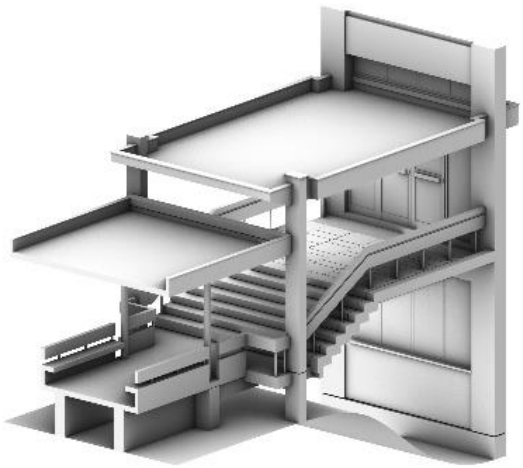


Figure 25. Electric and Electronics Engineering, Block A, Main Entrance Gate and Arcades. 3D Model by the author

Along with their individual sculptural value, their place in structuring the volumetric character of the METU Campus is the main decider for having an archival effort on these "volume defining architectural elements." These elements usually defines a mediating. This "mediating volume" here refers to an architectural gesture that defines an in-between[36] or intersection volume, connecting volumes between exterior and interior volumes, exterior and exterior volumes, or interior and interior volumes. This is especially very prominent throughout in the alley, the main pedestrian spine of the campus.

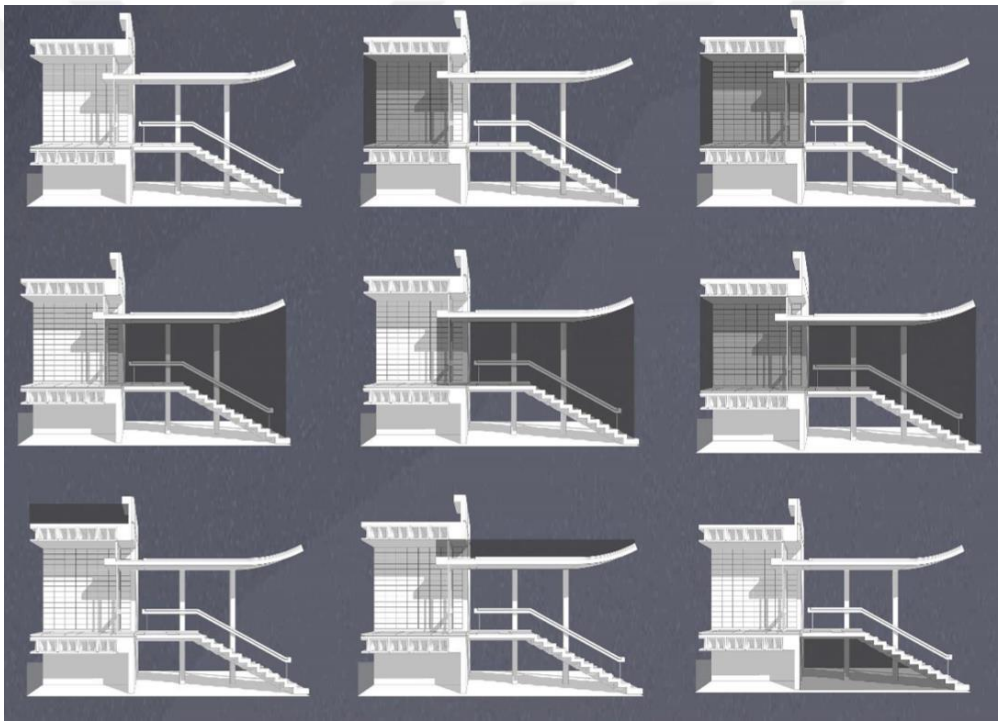


Figure 26. "Volumes" Model of METU Architecture Faculty Back Entrance Section Model, Image and Model by Setenay Özsoy for Arch524 Fall 2019-2020 term

[36] Serra İnan, "In-Between Spaces: The METU Faculty of Architecture Building Complex", Master's Thesis, (Middle East Technical University, 2019).

An example could be the entrance space of the Library building from the alley, which features platforms, level changes, pools and an artistic floor tiling. These elements are thought to be the definer of this particular space. (Figures 27, 28, 29, 30)

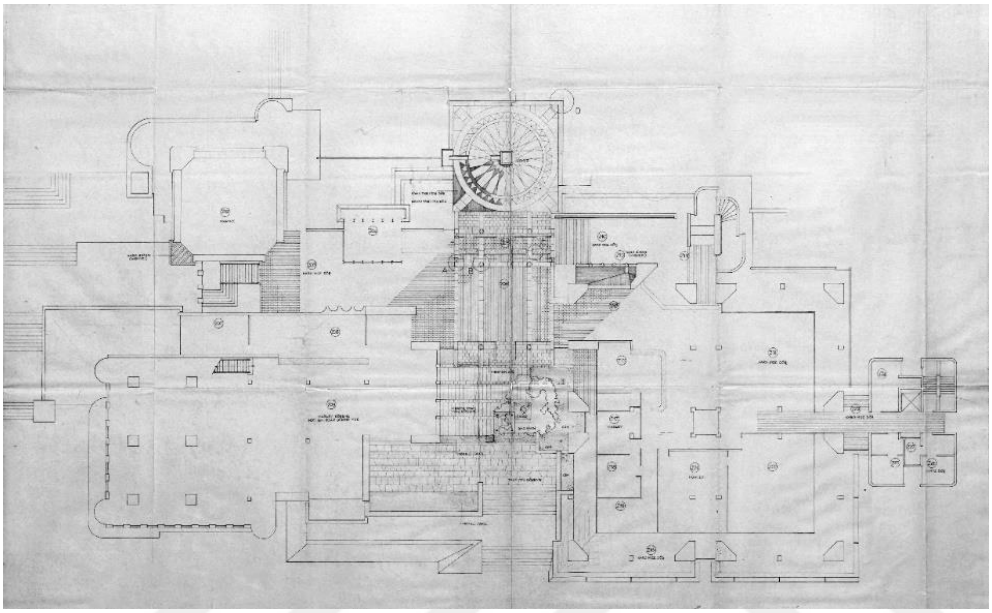


Figure 27. METU Library Entrance, drawing by Behruz Çinici and Altuğ Çinici

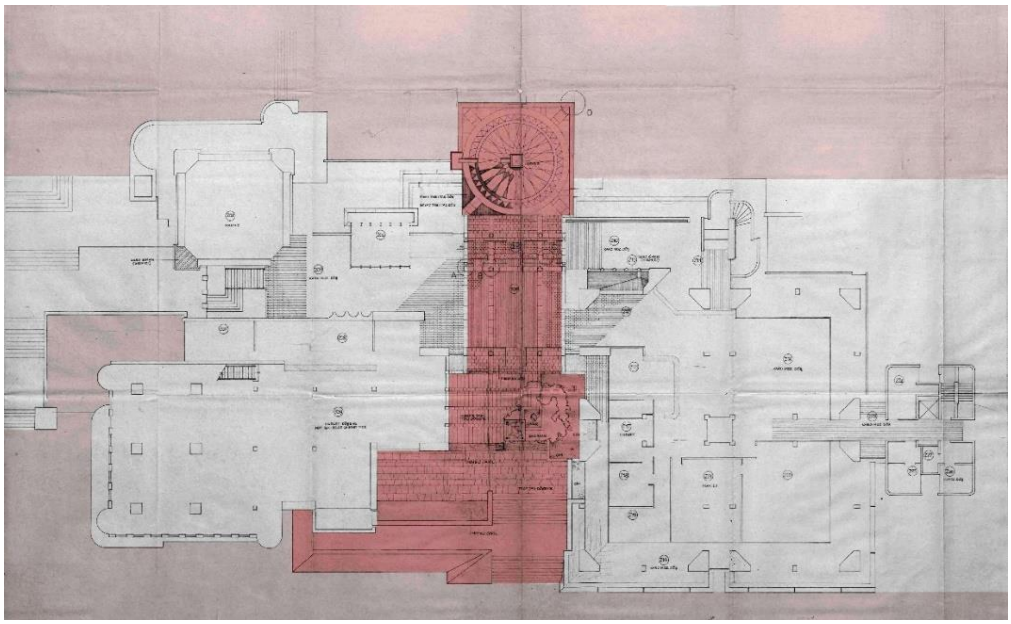


Figure 28. METU Library Entrance, drawing by Behruz Çinici and Altuğ Çinici. Entrance "Volume" (dark red) and the Alley (light red) are annootated by the author.

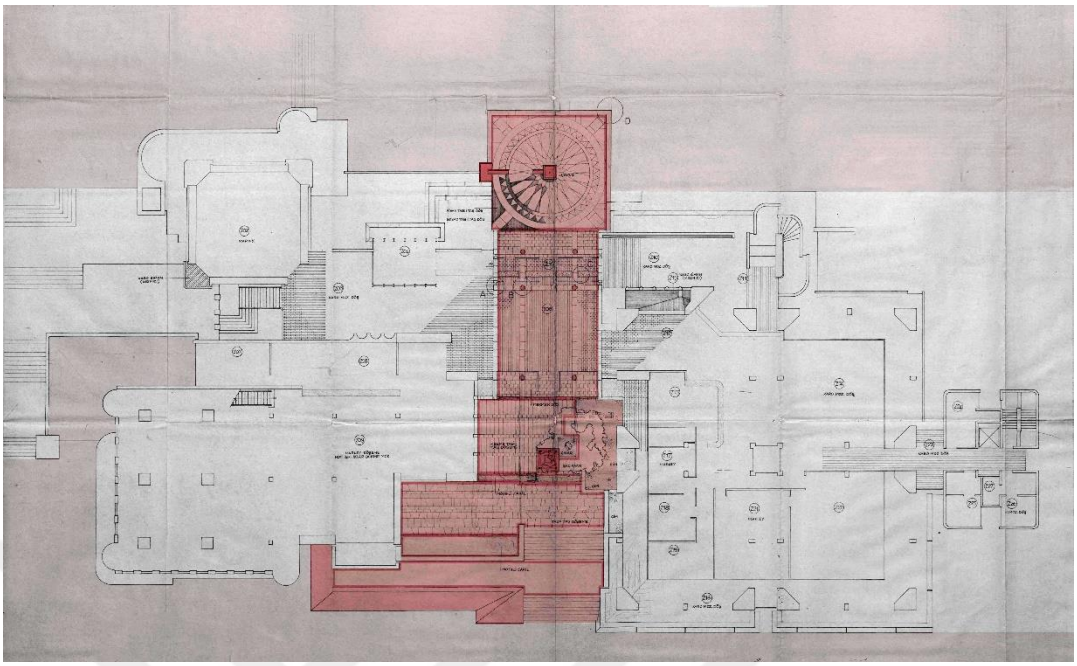


Figure 29. METU Library Entrance, drawing by Behruz Çinici and Altuğ Çinici. Individual "Volume Definign Architectural Elements", annotated by Uzay Doğan.

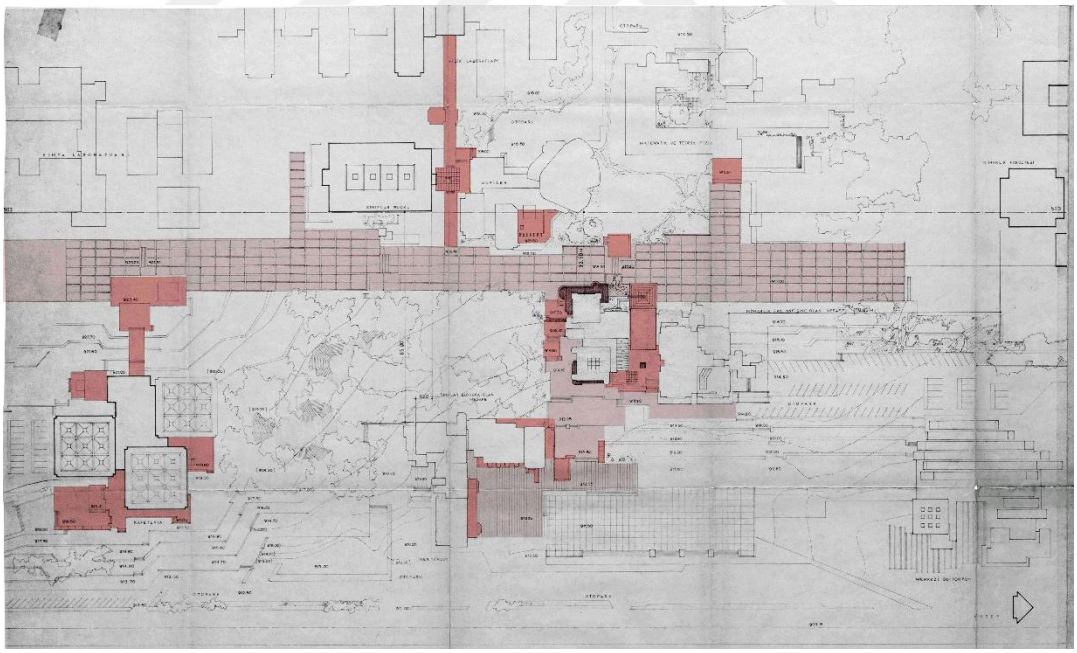


Figure 30. METU Library Area preliminary masterplan drawing by Behruz Çinici and Altuğ Çinici. Annotated by the author.

In the next chapters, this study will present these elements in an isolated manner. It must be mentioned that categorizing and drawing borders of these elements is an evasive task, but for a systematic representation and for expressing certain aspects of the METU Campus, this thesis isolates these entrance gates, platforms, pools, and staircases from their immediate surrounding built environment. However, it was not possible to separate these elements from each other categorically; as arcades become entrance gates, entrance gates stem from platforms in a manner that blurs any categories one might attribute to them. Thus, this study defines them with an umbrella term "Volume Defining Architectural Elements."

3.1.1 Architecture of Intersections

This archival study emphasizes the volumes of the architecture of intersections, such as bridges, gates, platforms, arcades, landscape elements, eaves, and more. There are intersections of two or more volumes, but also there is a conceptual intersection, between landscape and architecture. These intersections are blurry places in definition, as discussed in the "continuity of architecture and landscape" chapter. Blurring seeks to undermine the conceptual as well as the physical clarity of elements such as figure and ground.[37] In fact, the "formal tropes of modernism"[38] that mark the style of a building as "modernist", also reveals the distinguished position of in-between spaces in Modern Architecture. Among the other tropes, "transparency" and open plan ("free-flowing spaces") are directly related to the physical in-between spaces.[39]

[37] Peter Eisenman, "Blurred Zones," in Written into the Void: Selected Writings, 1990-2004 (New Haven: Yale University Press, 2007) 108-112.
[38] Sarah Williams Goldhagen, "Something to Talk About: Modernism, Discourse, Style," Journal of the Society of Architectural Historians, June 2005, 144-67 https://www.jstor.org/stable/25068142
[39] Serra İnan, "In-Between Spaces: The METU Faculty of Architecture Building Complex", Master's Thesis, (Middle East Technical University, 2019).

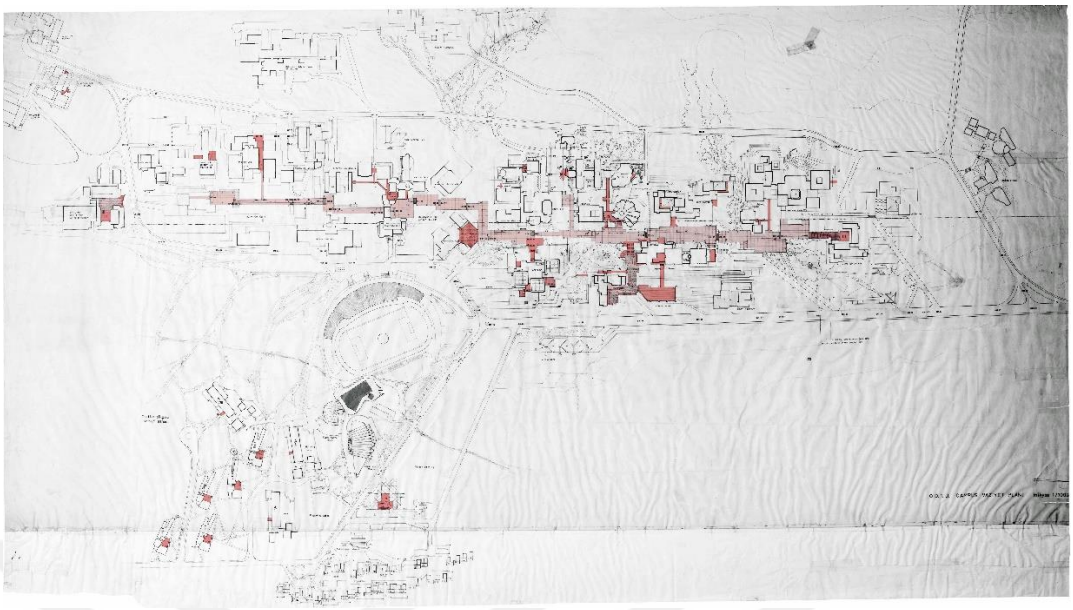


Figure 31. METU Campus Masterplan, with "volume defining elements" annotated by Uzay Doğan

"Volume Defining Elements" are annotated on the METU Campus masterplan. (Figure 31) This annotated masterplan becomes the navigation panel for the elements listed in this study, using a dark red hatched area to indicate the volume defining surfaces, and light red hatched area to indicate the alley, other exterior volumes and interior volumes.

Then, the volume study is continued by re-examining the initial volume research and further inquiring about these annotated elements, which were discovered during on-site studies. When these elements are annotated on the volume models and literal models from the initial volume research (Figures 32, 33, 34) similar to how they are annotated on the masterplan, they reveal an abstract impression of the intersections of volumes, which informs the continuation of the volume research.

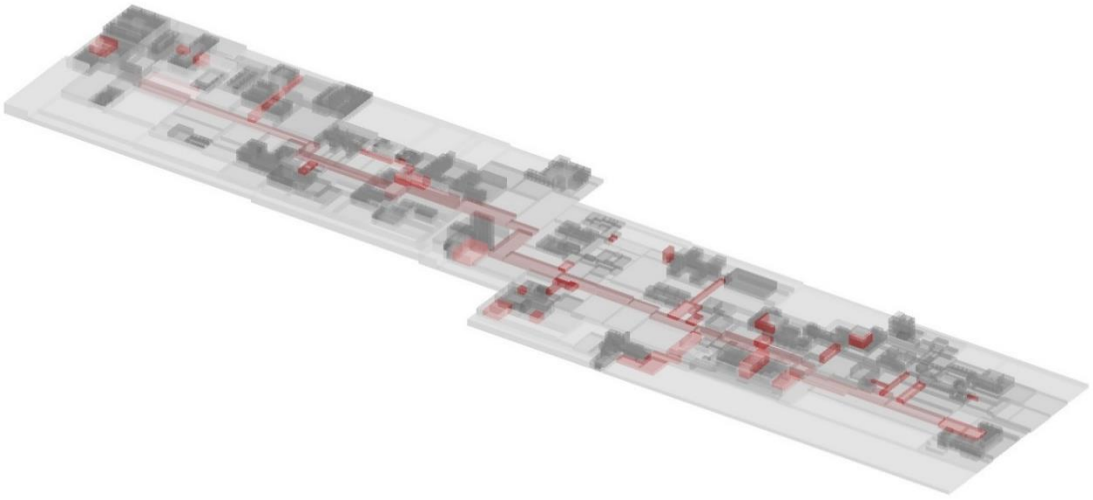


Figure 32. Annotated Volume Model

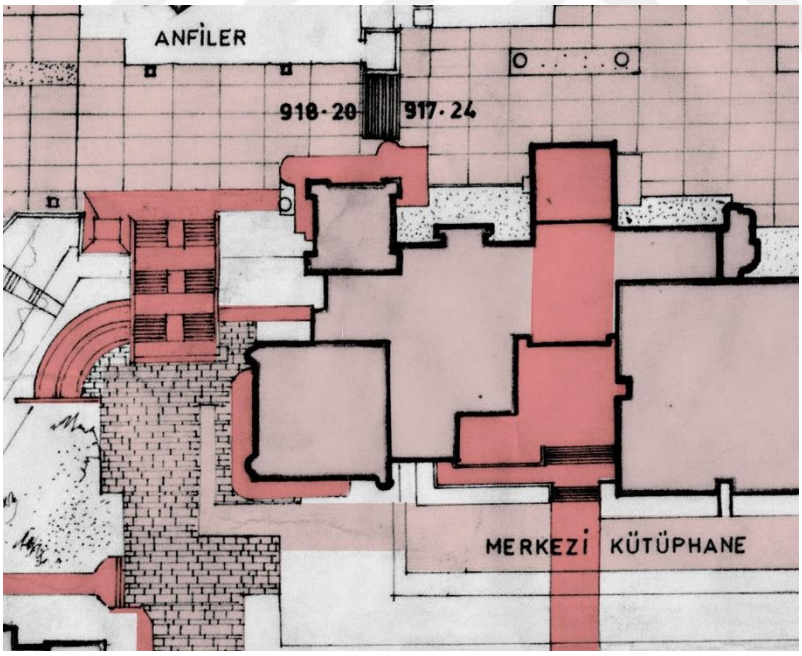


Figure 33. METU Campus Masterplan snippet, Library entrance and the rectorate staircase, annotated by Uzay Doğan

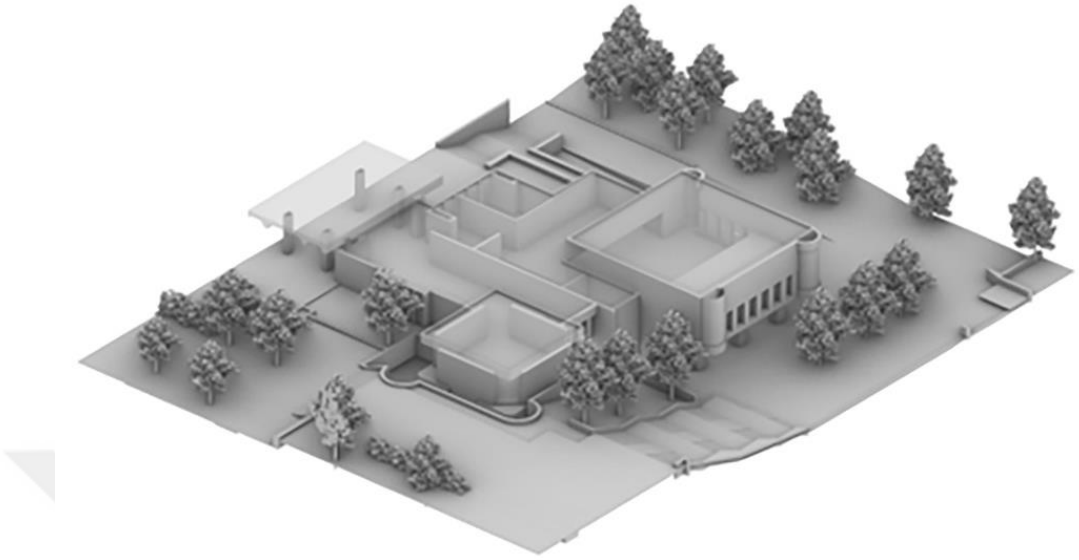


Figure 34. Literal Model of the Library Entrace from the Initial Research, 3D model by Ege Doğan and Uzay Doğan

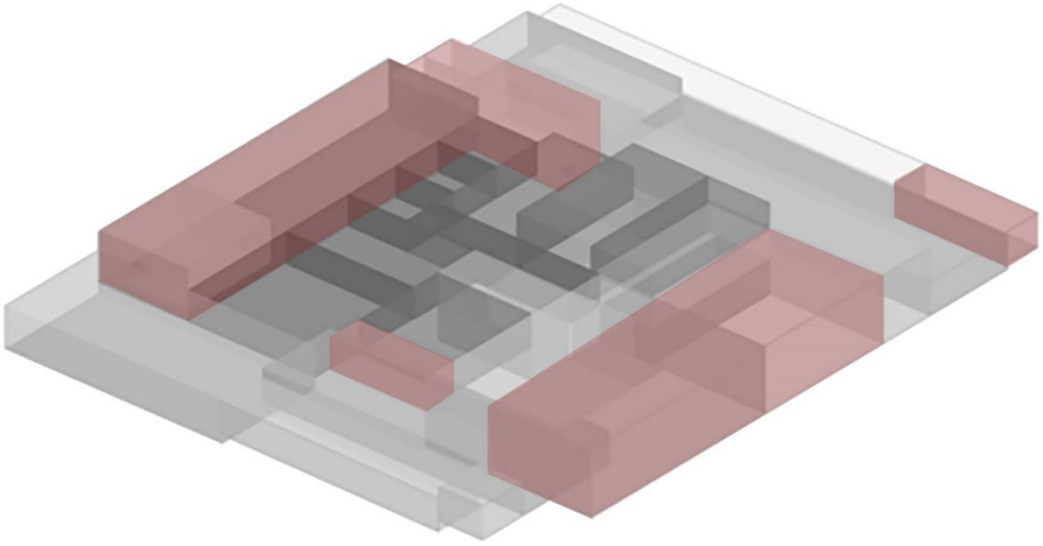


Figure 35. Annotated Volume Model of the Library Entrance

3.2 Method of Representation

The process of developing a representation method for this thesis has started with on-site tours, mainly on the alley, and photographing areas of interests such as raised platforms, stairs, arcades, entrance gates, landscape elements and pools: in an attempt to understand their qualities as volume defining elements and their relation with their built environment as a whole. (Figure 36)



Figure 36. Cafeteria Building, Front Entrance Platforms, photo by Uzay Doğan

It should be noted that this archiving process excludes many elements as well, such as sculptures that were made by different artists, new buildings and interventions after the campus was established in the 60s. Rather it focuses on the original state when the campus is first designed and established by the architects Behruz Çinici and Altuğ Çinici. Here, along with volume defining qualities, architects' touch is the deciding factor in what and what not to include in this list, in order to undercover the campus' initial design principals.

Then this photographing process continued by finding their corresponding technical plans, sections and elevations from the "Salt Research Archives, which contains

most of the original, hand drawn architectural drawings and documents of the METU Campus.

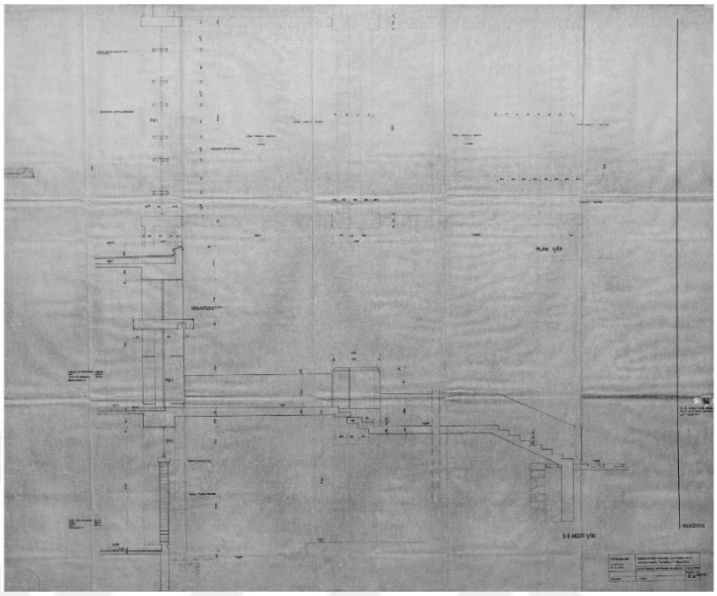


Figure 37. Cafeteria Building, Front Entrance Platforms, Technical Drawings by Behruz Çinici and Altuğ Çinici



Figure 38. Cafeteria Building, Front Entrance Platforms, 3D model by Uzay Doğan

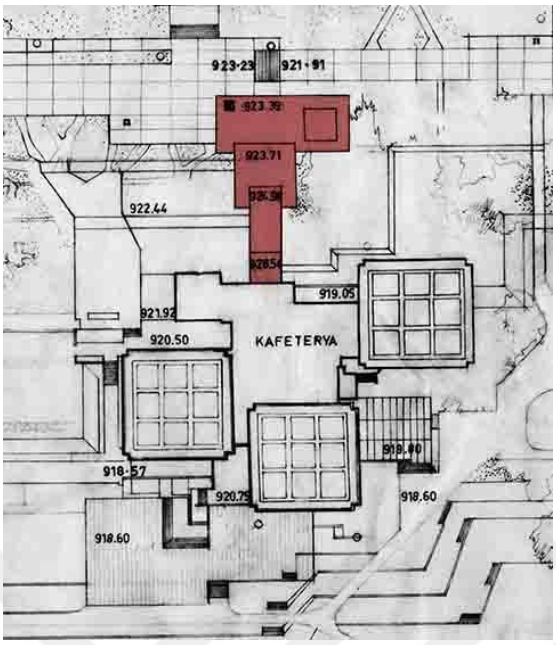


Figure 39. Cafeteria Building, Front Entrance Platforms, annotated by the author

From these drawings, a series of 3D models are then digitally constructed. There are several reasons for this direction of literal representation, similar to how the alley and the faculty buildings adjacent to it is constructed within the Arch505 and Arch571 research. These 3D Models are presented in an axonometric manner. The underlying logic for this axonometric presentation takes reference from Yve-Alain Bois' essay "Metamorphoses of Axonometry".[40]

Orthographic technical drawings of the METU Campus communicates dimensional information of the construction while photography of the campus communicates information on the scenic and visual condition of it. The axonometric 3D models cover the gap between these two modes of representation to reveal a hidden layer of information. Its purpose is not to present a scenery and not to communicate a dimensional information. It is to create a digital representation of the impression of

[40] "Metamorphoses of Axonometry" is an essay that is published in 1981 that covers the historical development and place of axonometric drawing in architecture.

the physical condition of these elements while keeping its objective dimensional proportions constant, unlike perspective presentations, and by isolating them any additional obstructing elements such as greenery.[41] Thus, as axonometry destroys neither the basic linearity nor the objectivity of the representation led to adaption of the technique in this study. Furthermore, axonometry, unlike two-dimensional orthographic drawings, has the ability to let go of contour, which is done in this research. This quality allows these models to transcend the category of merely being a technical representational drawing and allows them to be perceived as objects. These axonometric drawings are isolated similar to how technical orthographic drawings are isolated to a series of informative parts of a whole with different levels of details. The isolation of these elements takes reference from the section boundaries in the technical drawings by Behruz Çinici and Altuğ Çinici. Moreover, axonometric view supposes itself as a rational and objective presentation style, similar to how orthographic drawings position themselves as such, as axonometric drawing itself can be thought of an intersection of those drawings, like a transparent box with a plan at the bottom or at the top, elevations at the sides and a section inside. This is the 3D modelling process that is employed in this thesis. Thus, with the addition of these axonometric models to curated drawings from Çinicis and the photographs by the author, this thesis hopes to communicate the physical qualities of these volume defining architectura elements in a systematic manner, which has not been done before with this extent.

[41] Yve-Alain Bois, "Metamorphosis of Axonometry," Daidalos: Berlin Architectural Journal, 1, 40–58, 1981.

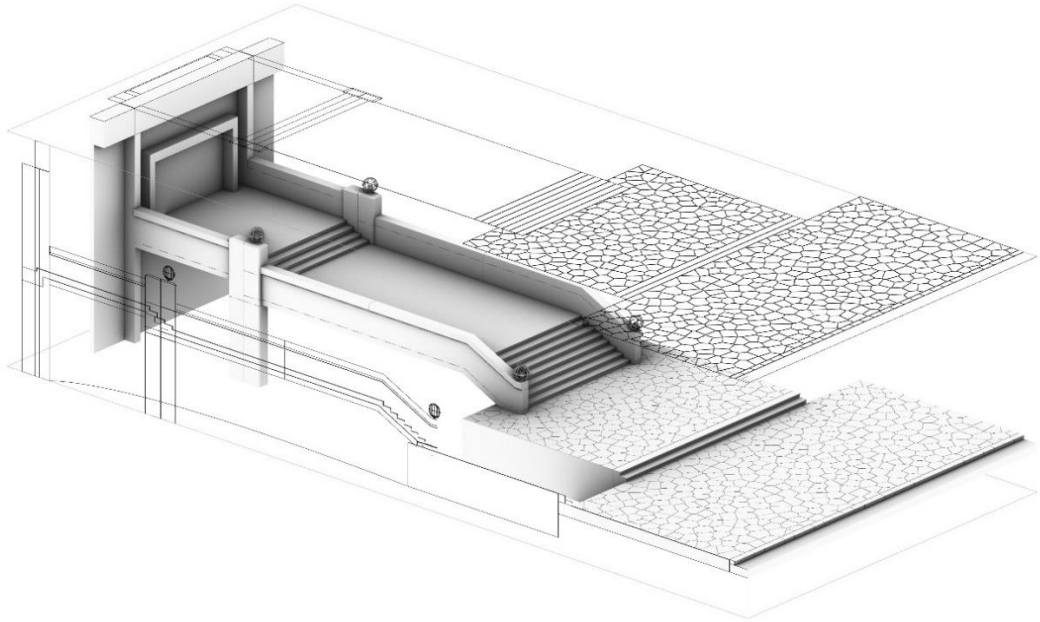


Figure 40. 3D Model and Ortographic Drawings of Cafeteria Building, Front Entrance Platforms, 3D Model by the author

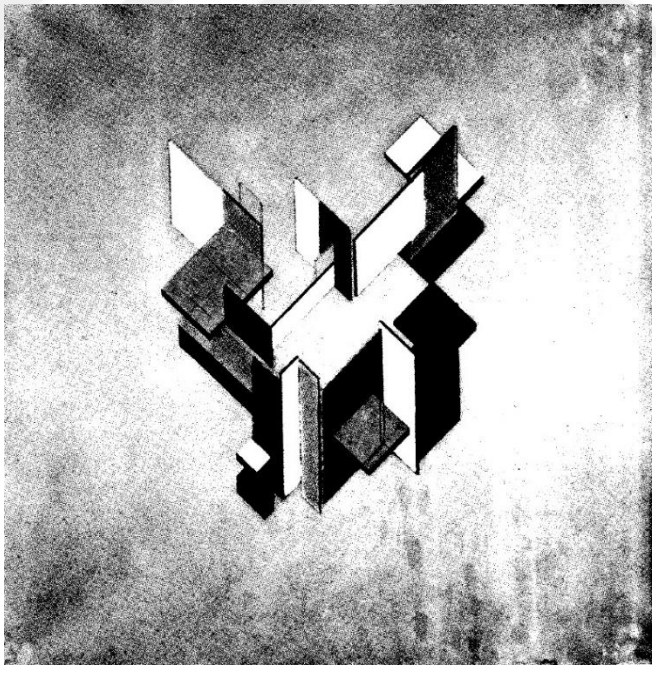


Figure 41. Contra-Construction – Architectural Analysis, Theo van Doesburg, 1923

Source: Metamorphoses of Axonometry, Yves-Alain Bois

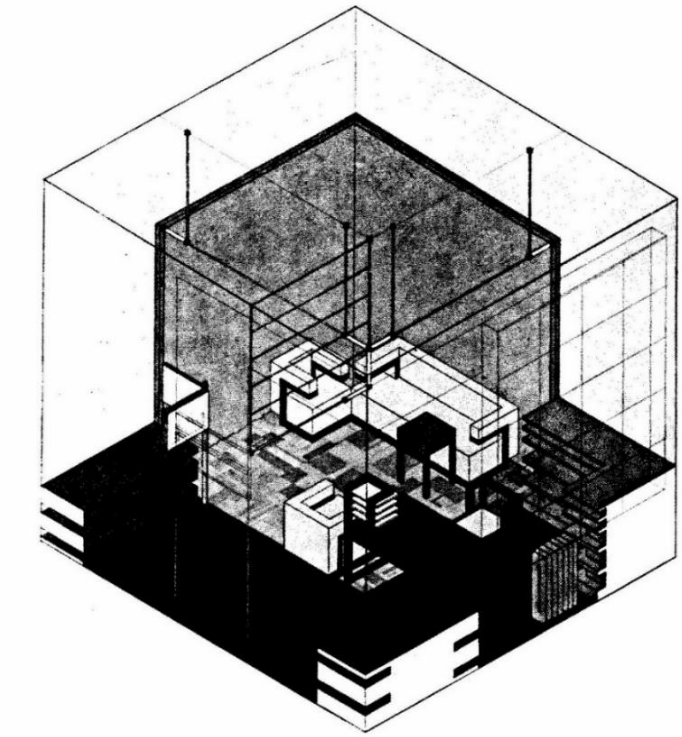


Figure 42. The office of Walter Gropius at the Bauhaus in Weimar, Herbert Bayer 1923

Source: Metamorphoses of Axonometry, Yves-Alain Bois

These three kinds of representations: photographs, 3D models and technical drawings, which are arranged in this order in the "Volume Defining Architectural Elements" list. However, because this presentation of elements in isolated manner, they may not communicate the place of those parts in a whole competently. Thus, an additional series of representations are introduced which consists of annotated snippets from the METU Campus masterplan. (Figures 31, 43)

However, it must be noted that this thesis was not able to cover every single element that is shown here, simply due to time restrictions and the scope of this master's thesis. Thus, this thesis does not claim to be an over compassing archive of this subject, rather it aims to be an introductory study on the subject and a digital 3D model database which future studies can rely and expand upon, similar to how this study relies and expands upon previous studies and Ayşen Savaş's interrelated

courses on the METU Campus and "different modes of architectural representation."[42]

3.2.1 Re-production and Re-tracing

This thesis utilizes re-production and re-tracing as tool for critical thinking, in relation with the idea of "research by design". By re-producing and re-presenting the existing object, the campus and its original drawings in a critical way, this study employs a directed process of abstraction. This directed process of abstraction is towards enhancing the current knowledge of the METU Campus cultural heritage by investigating the subject of volume.

This thesis utilizes photography, original architectural drawings and 3D models. These 3D models aims a "reproductional continium"[43] between architectural drawings and photography. These 3D models are presented in a sterile way and without attempts to realism.[44] Material realism is thought to be not a necessary mean to grasp the series of hardscape forms defining volumes.

Because of the scope of this masters thesis, these models could not become physical objects, however it is within this studies aims that they can be of use for further studies within this conservation by documentation effort.

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[42] Kapusuz, B.B. Perspective for the Reproduction of Architectural Space: ARCH 524 as a Pretext, (Middle East Technical University, 2012).

[43] Baker, Malcolm. "The Reproductive Continuum: plaster casts, paper mosaics and photographs as complementary modes of reproduction in the nineteenth-century museum". Plaster Casts: Making, Collecting and Displaying from Classical Antiquity to the Present, edited by Rune Frederiksen and Eckart Marchand, (Berlin, New York: De Gruyter, 2010): pp. 485-500. https://doi.org/10.1515/9783110216875.485

[44] Lending, Mari. Plaster Monuments: Architecture and the Power of Reproduction. (Princeton: Princeton University Press, 2017), muse.jhu.edu/book/101212.

3.4 List of Volume Defining Architectural Elements

In this chapter, all these volume-defining elements are listed. Each of those utilizes three representational methods: photographs, 3D models that is presented in axonometric view and the original technical drawings of the architects, and an additional annotated masterplan snippet. Their placement in the METU Campus can be traced with numbered masterplan. (Figure 43) and their immediate environment is displayed by the masterplan snippets. The numbering of the elements are determined in a linear way, starting from the dormitories, and then moving to the north side of the alley starting from the cafeteria, then handling the south side of the alley. After that, it numbers the faculty complexes that are not directly connected with the alley.

It should be noted that this study both focuses on the built and the designed METU Campus. Through this research, it was discovered there were many elements that were not built which many of them strengthens the volumetric structure of the METU Campus but likely were not realized due to budget limitations. These abandoned designs were mainly pool designs, auditorium designs and intricate landscape elements. These were also included in the list of "volume defining architectural elements" as this study aims to uncover the initial design principles of the architects.

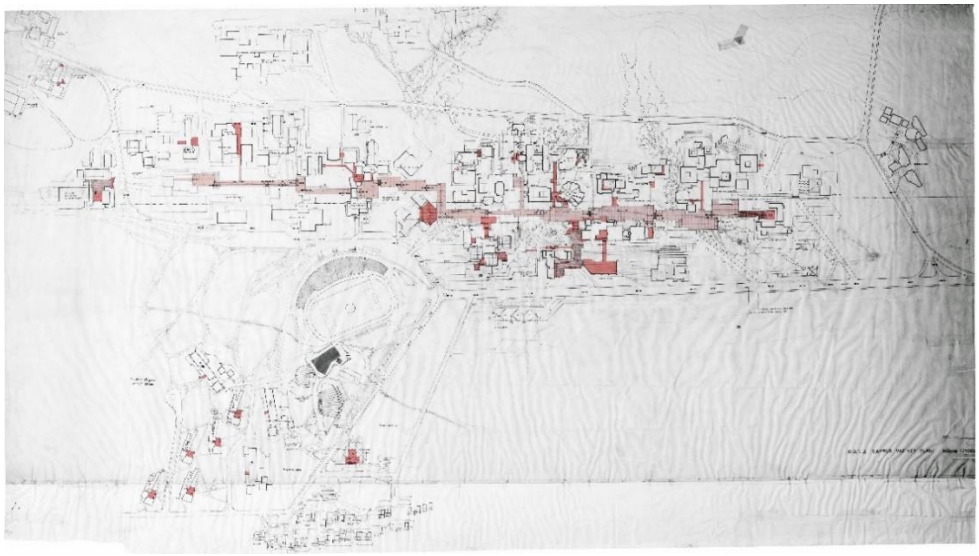


Figure 43. METU Campus, Annotated Masterplan

1. 1st and 2nd Dormitories Entrance Gate



Figure 44. 2nd Dormitory Entrance Gate, photograph by the author, 2022

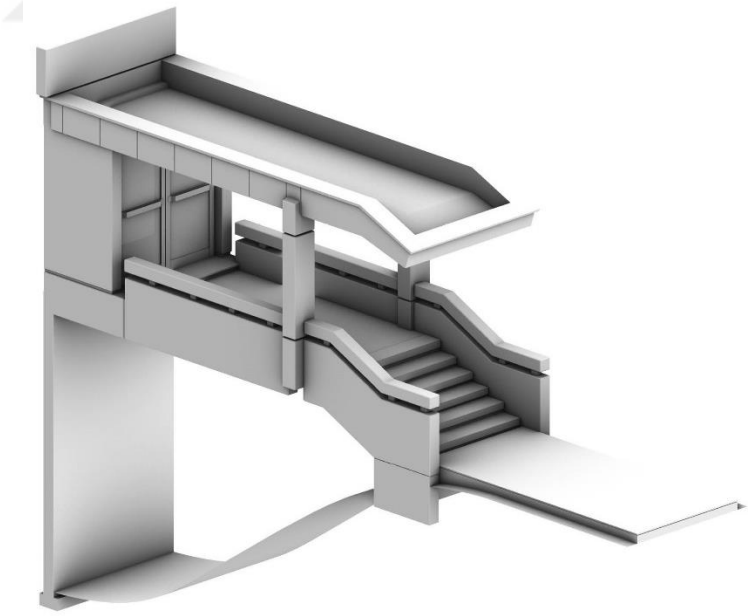


Figure 45. 1st and 2nd Dormitory Entrance Gate, 3D Model by the author, 2022

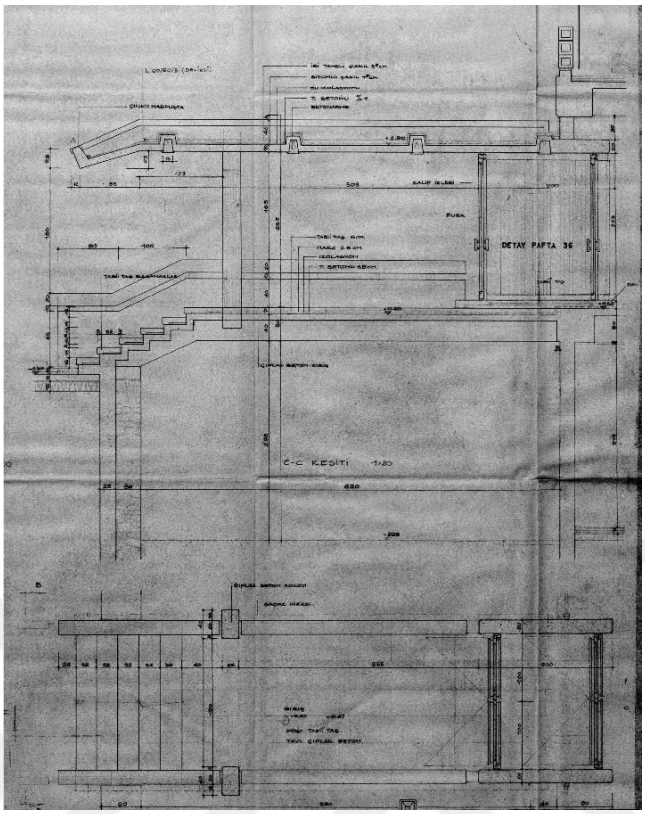


Figure 46. Technical drawings of 1st and 2nd Dormitory Entrance Gate by Behruz Çinici and Altuğ Çinici

The first object is the 1st and 2nd Dormitory Entrance Gates. It competently features some of the design principles of that is also consistent with many of these elements. These are the concrete eave and columns with intricate joint gap placements, concrete balustrades and stone tiling that are all presented in a sculptural way.[45] This object defines a volume in a distinct way by both with its physical enclosure and its sculptural presence.

[45] Rosalind Krauss, Sculpture in the Expanded Field, (The MIT Press, Vol. 8 Spring, 1979): 30-44.

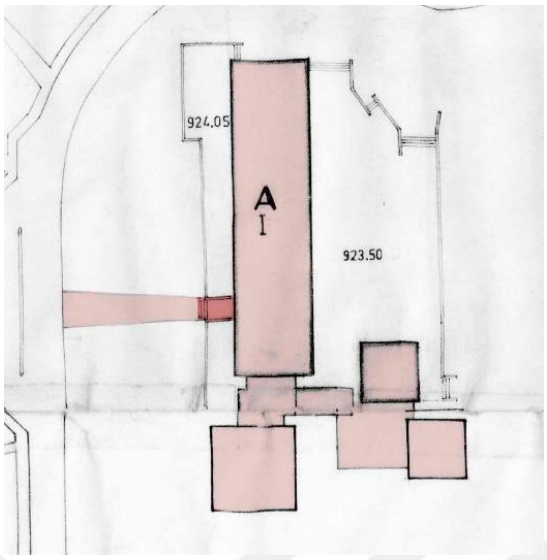


Figure 47. METU Campus Masterplan, with "volume defining elements" annotated by Uzay Doğan

2. 8th Dormitory Entrance Gate



Figure 48. 8th Dormitory Entrance Gate, photograph by Uzay Doğan, 2022

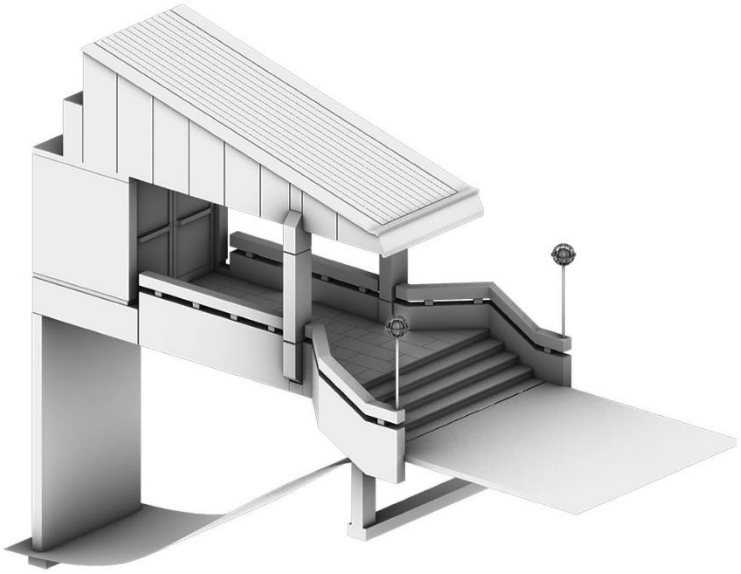


Figure 49. 8th Dormitory Entrance Gate, 3D Model by the author, 2022

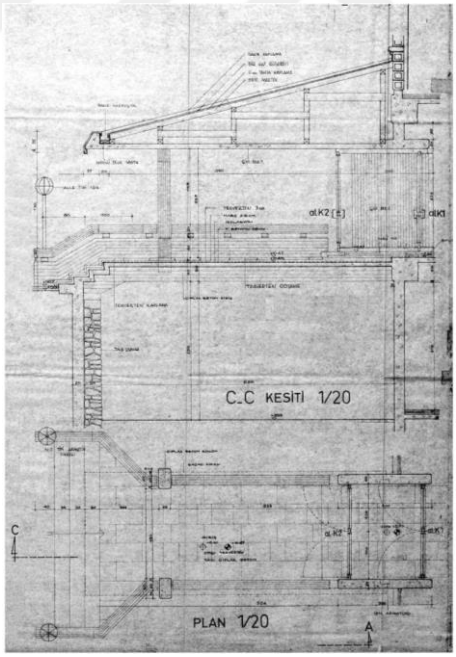


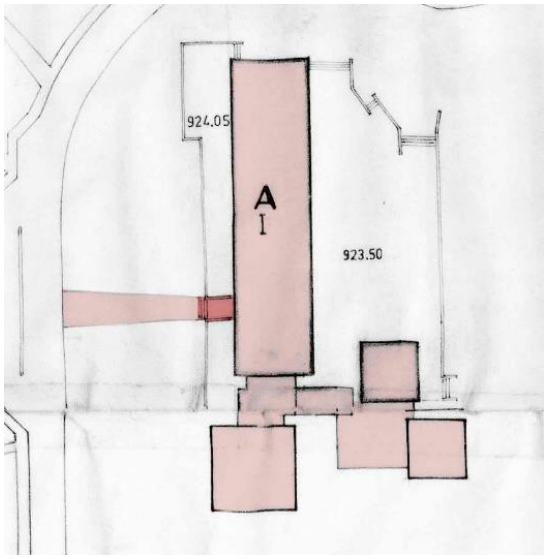
Figure 50. . 8th Dormitory Entrance Gate, drawings by Behruz Çinici and Altuğ Çinici

Although it is very similar to the 1st and 2nd Dormitories Entrance Gates, 8th Dormitory Entrance Gate additionally features metal cast lighting element. However,

this entrance gate is not fully realized; there are small changes in the built version, such as there are no lighting elements, the staircase area, and its balustrades do not curve outward when reaching the ground. Overall, it is designed in a very similar way to the 1st and 2nd Dormitories Entrance Gates except for the eave shape and its copper cladding.



Figure 51. Ligting Element at the Administrative Sciences Faculty Courtyard, photograph by the author, 2022



3. Cafeteria 1st Floor Entrance Gate & Platforms



Figure 52. Cafeteria Front Entrance, photograph by the author, 2022

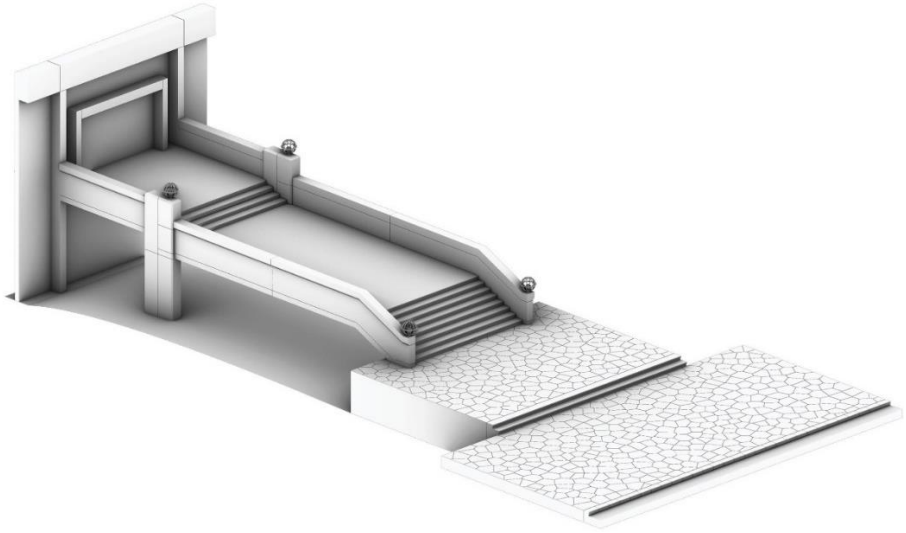


Figure 53. Cafeteria Front Entrance, 3D Model by the author, 2022

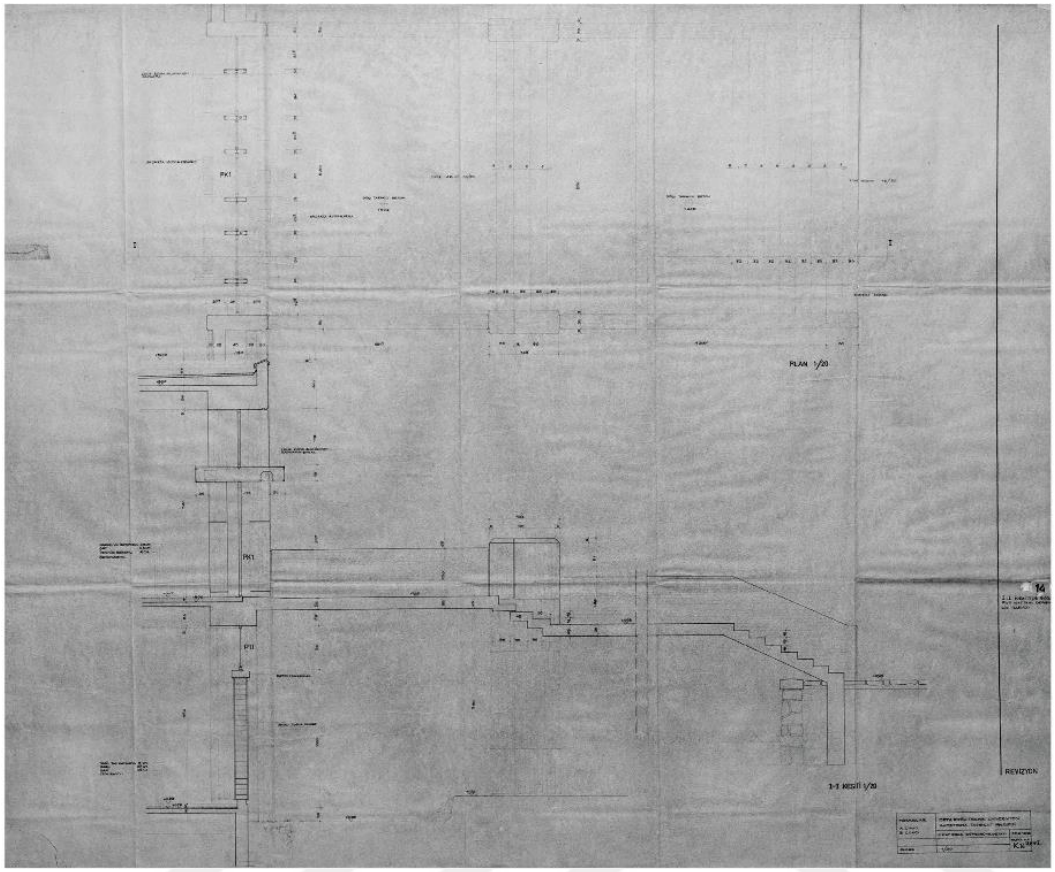


Figure 54. Cafeteria Front Entrance technical drawings by Behruz Çinici and Altuğ Çinici

As one of the main entrances to the Cafeteria Building and connecting directly to the alley, Cafeteria 1st Floor Entrance & Bridge is one of the most important elements to observe in terms of the alleys volumetric structure. It features an exposed concrete bridge 15 meters in length and 4 meters in height. The bridge itself is divided with intricate placement of joint gaps and four lighting elements are placed through this bridge. The Bridge lands on a raised platform that is tiled with natural stones; this platform is adjacent to another raised platform with the same tiling, which is connected to the alley in a seamless way. Although there is no well-defined eave compared to the other entrance gate designs, there is an enclosing gesture with a concrete element.

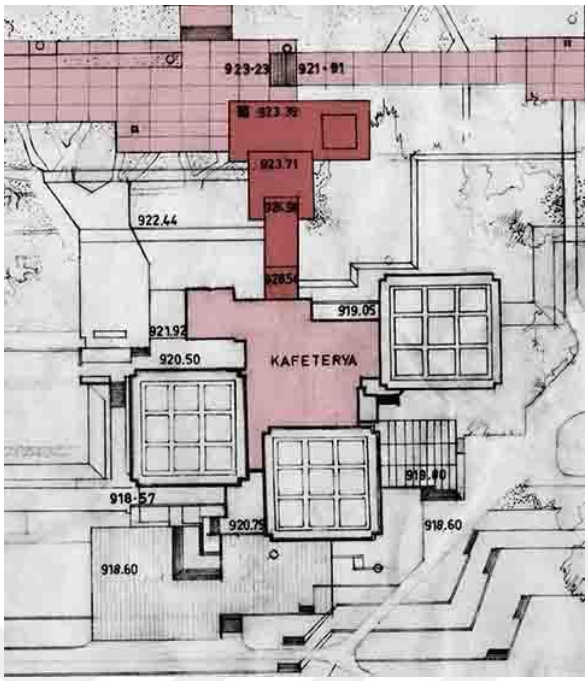


Figure 55. Cafeteria 1st Floor Entrance, annotated by the author

4. Cafeteria Ground Floor Entrance & Platforms



Figure 56. Cafeteria Ground Floor Entrance, photograph by the author, 2022

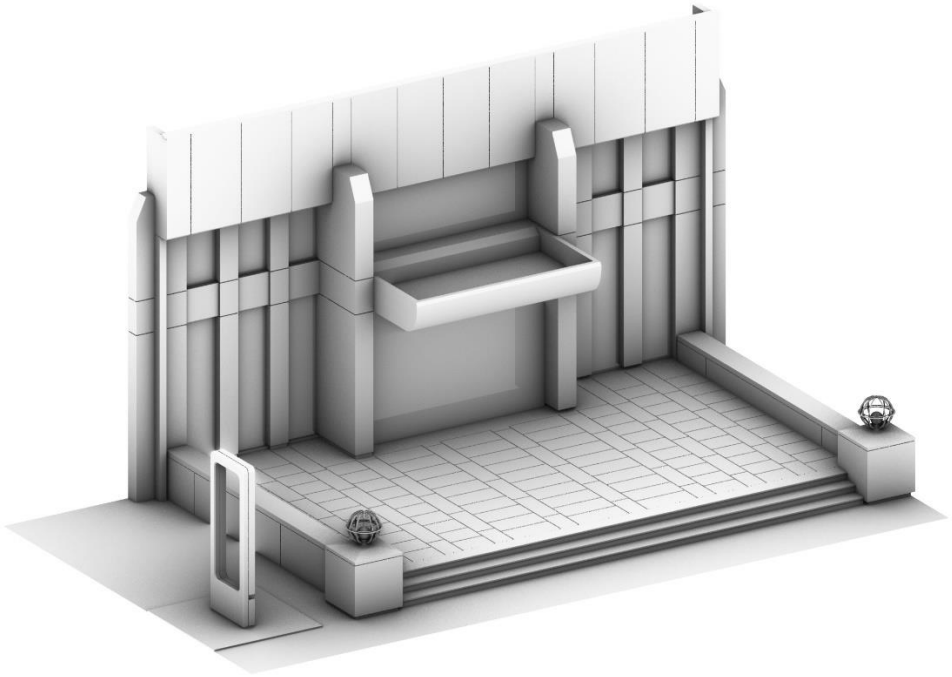


Figure 57. Cafeteria Ground Floor Entrance, 3D Model by the author, 2022

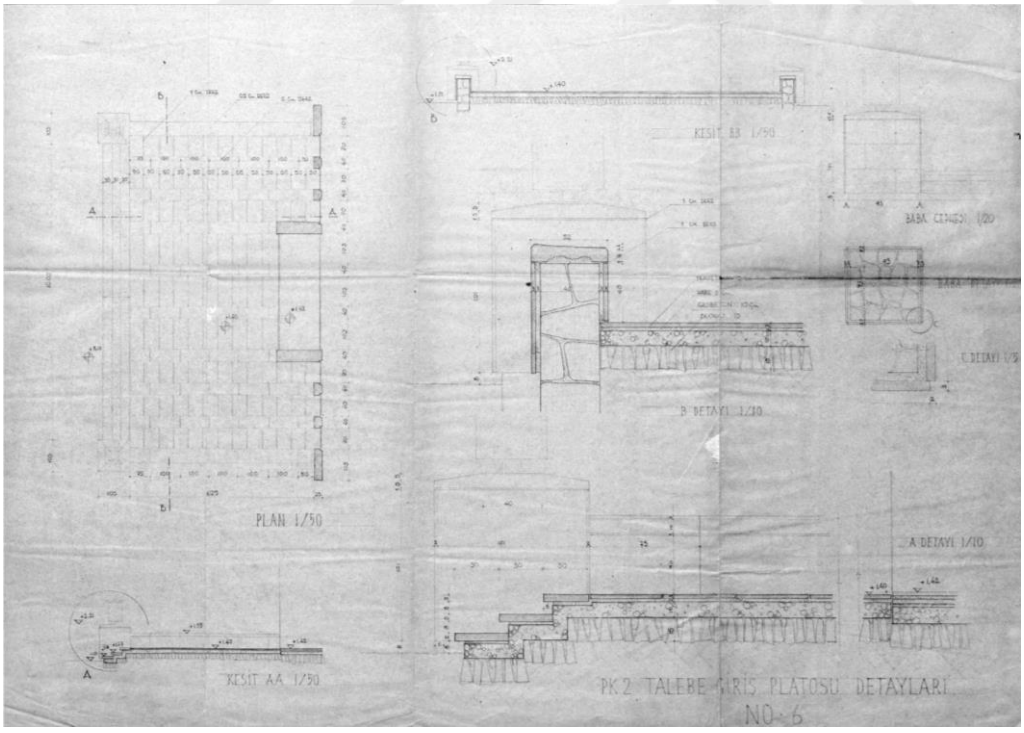


Figure 58. Cafeteria Ground Floor Entrance, technical drawings by Behruz Çinici and Altuğ Çinici

The other main entrance of the Cafeteria Building is from its ground floor. Although it does not directly connect to the alley, it has distinct volumetric qualities. It features a raised platform with stone tiling, a less pronounced eave compared to the dormitory entrances, two lighting elements and a unique sculpture-like exposed concrete frame on natural stone platform.



Figure 59. Cafeteria Ground Floor Entrance, Concrete Frame

5. Cafeteria Ground Floor Back Entrance & Platforms



Figure 60. Cafeteria Ground Floor Back Entrance, photograph by the author, 2022

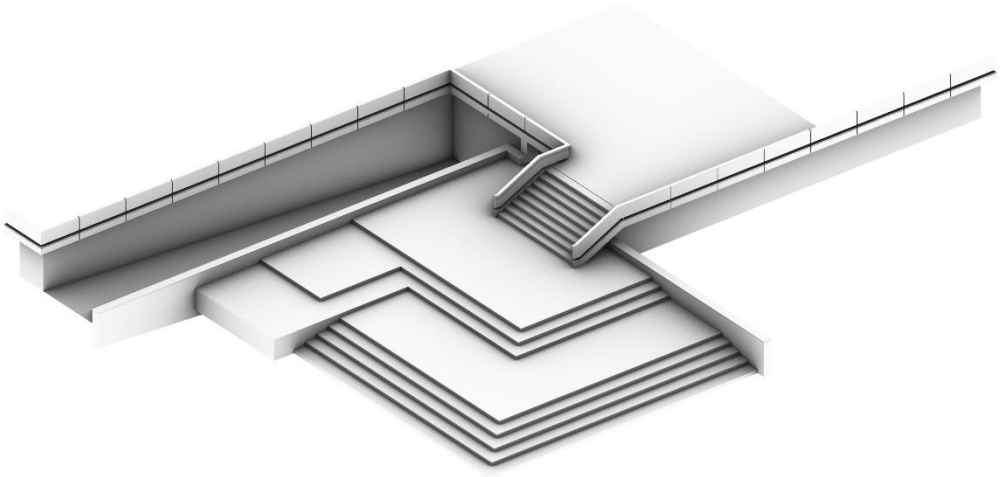


Figure 61. Cafeteria Ground Floor Back Entrance, 3D Model by the author, 2022

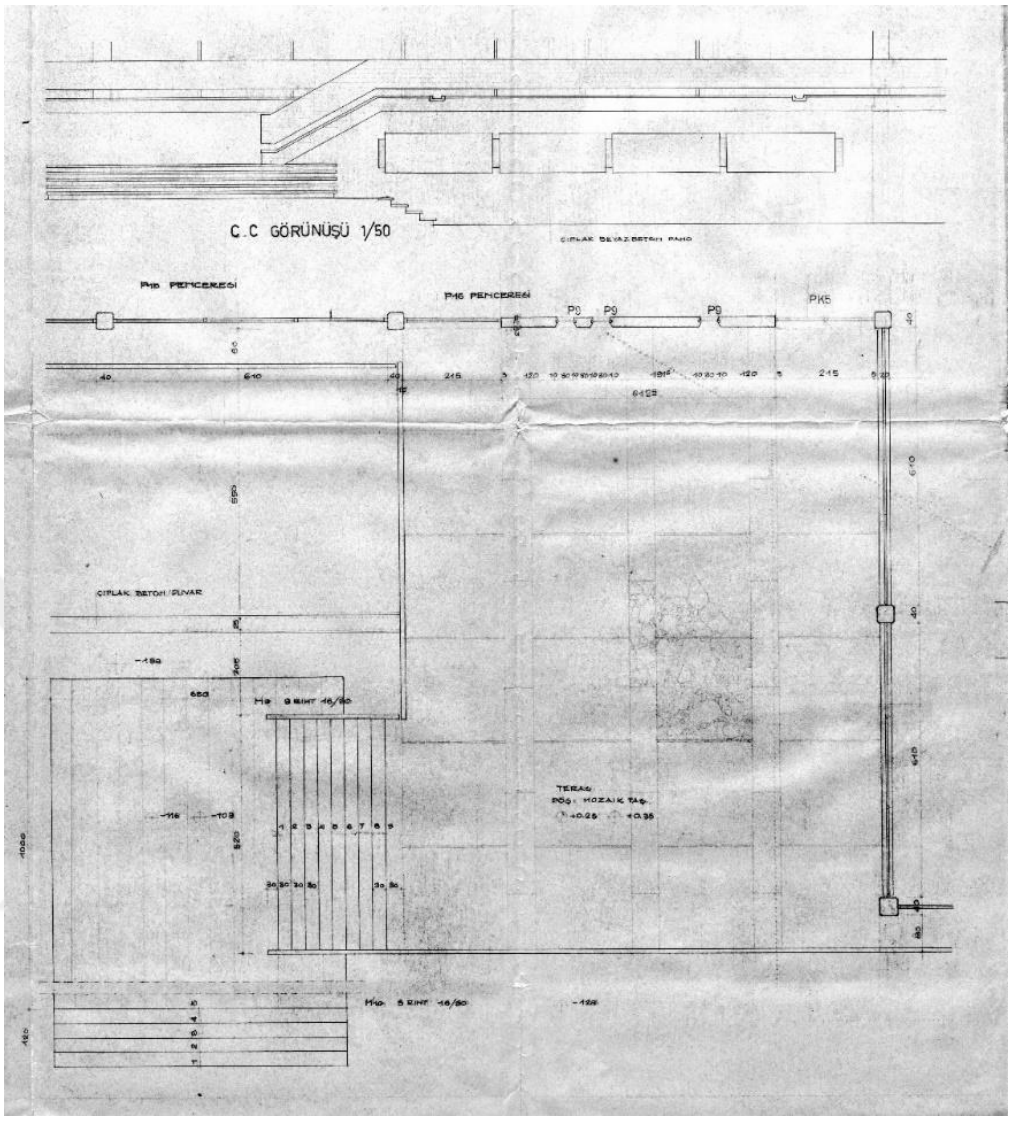


Figure 62. Cafeteria Ground Floor Back Entrance, technical drawings by Behruz Çinici and Altuğ Çinici

This cafeteria entrance is mainly used by the personnel. There is also a vehicle entrance adjacent to it. This entrance features a series of raised platforms, a bridge like staircase, and exposed concrete balustrades with natural stone retaining walls framing these geometrically.

6. Cafeteria Academic Staff Entrance & Platforms

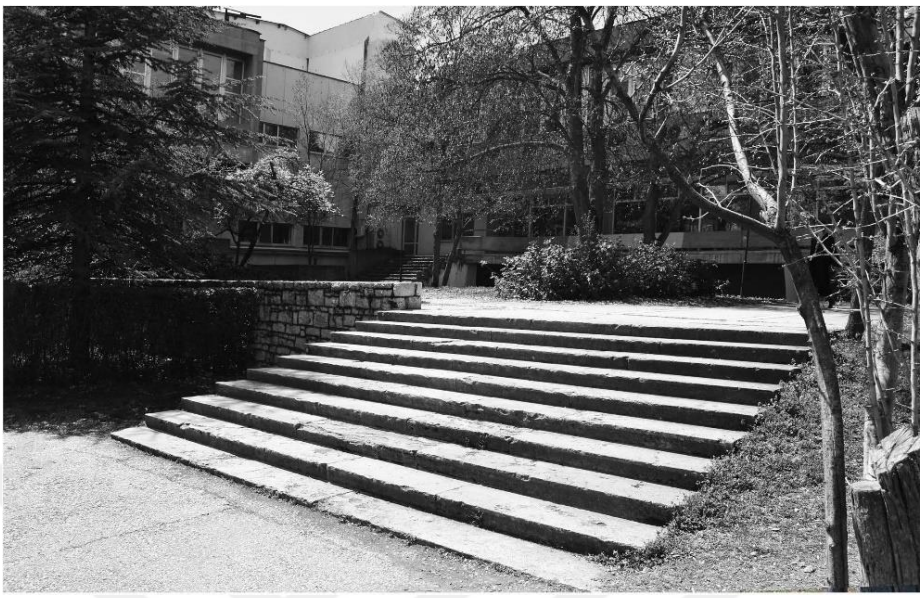


Figure 63. Cafeteria Academic Staff Entrance, photograph by the author, 2022

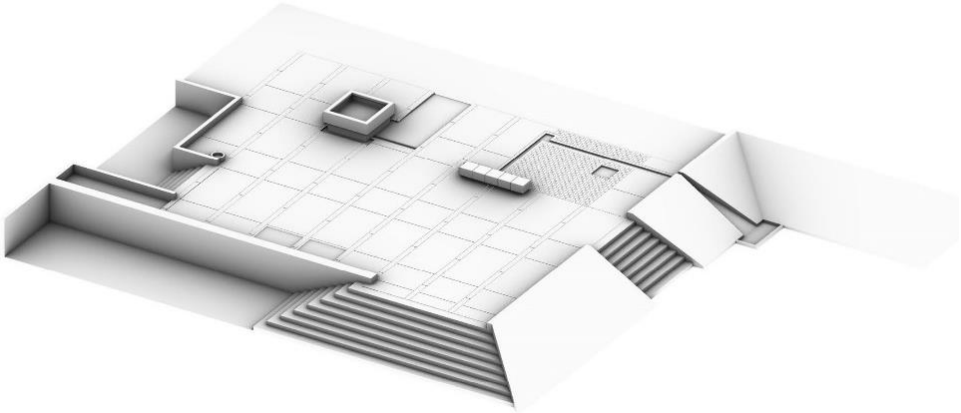


Figure 64. Cafeteria Academic Staff Entrance, 3D Model by the author, 2022

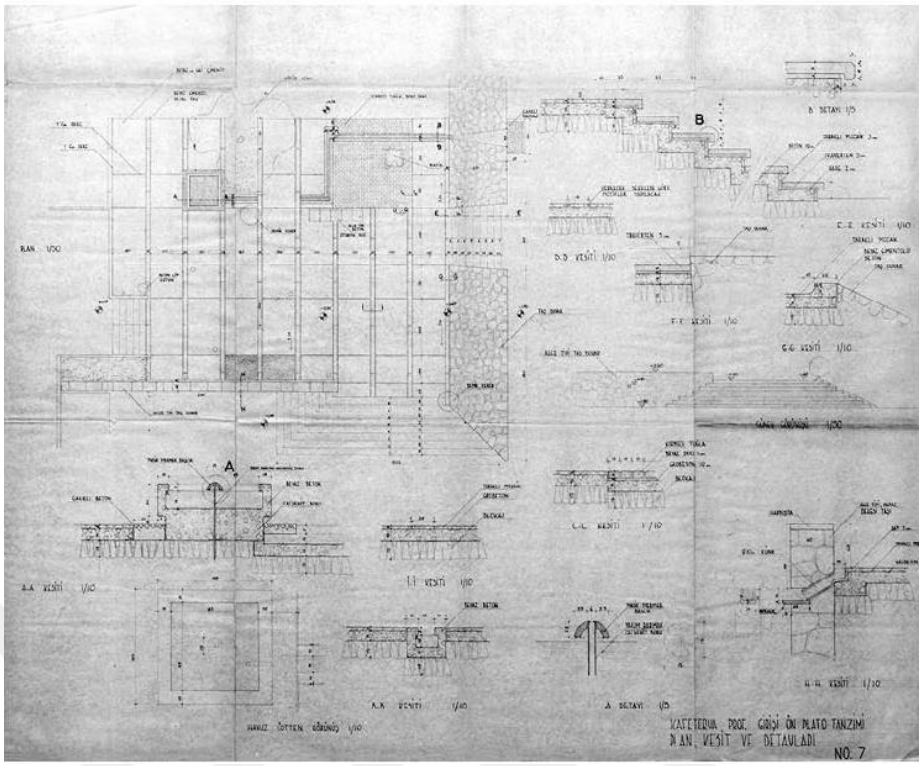


Figure 65. Cafeteria Academic Staff Entrance, technical drawings by B. Çinici and A. Çinici

Academic staff entrance is a unique attempt to populate a raised entrance with various elements such as a pool, a fountain, an exposed concrete seating, greenery and inclined natural stone retaining walls. However, it was not fully realized physically and its function as academic staff entrance was cancelled. Today it functions as a back entrance mainly used by the cafeteria personnel.

These last four volume-defining elements, the cafeteria entrances, display a consistent pattern of spatial configuration that is also prominent in the whole METU Campus. This thesis claims that these entrances create a mediatory space between the buildings and the alley, or any other exterior volume, that result in Campus' interconnected and intersecting volumetric structure through their qualities as volume defining elements.

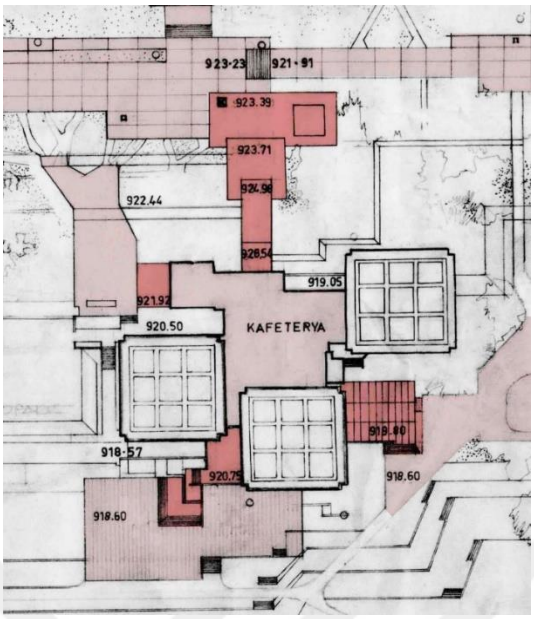


Figure 66. Cafeteria from Masterplan Drawing, Entrances, annotated by the author

7. Alley-Rectorate Staircase & Auditorium



Figure 67. Alley-Rectorate Staircase & Auditorium, photograph by the author, 2022

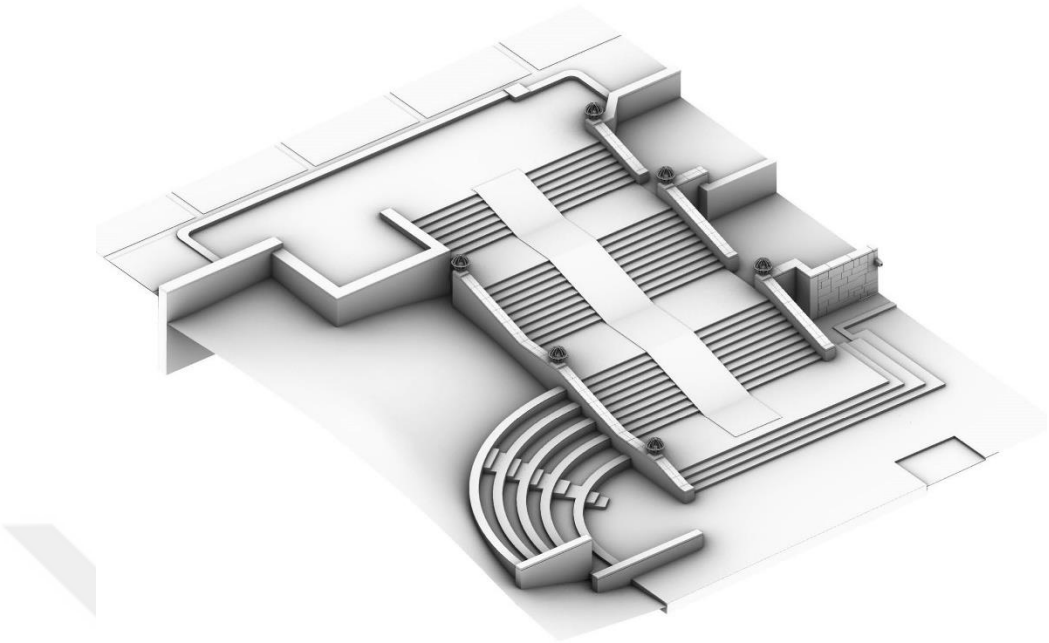


Figure 68. Alley-Rectorate Staircase & Auditorium, 3D model by the author, 2022

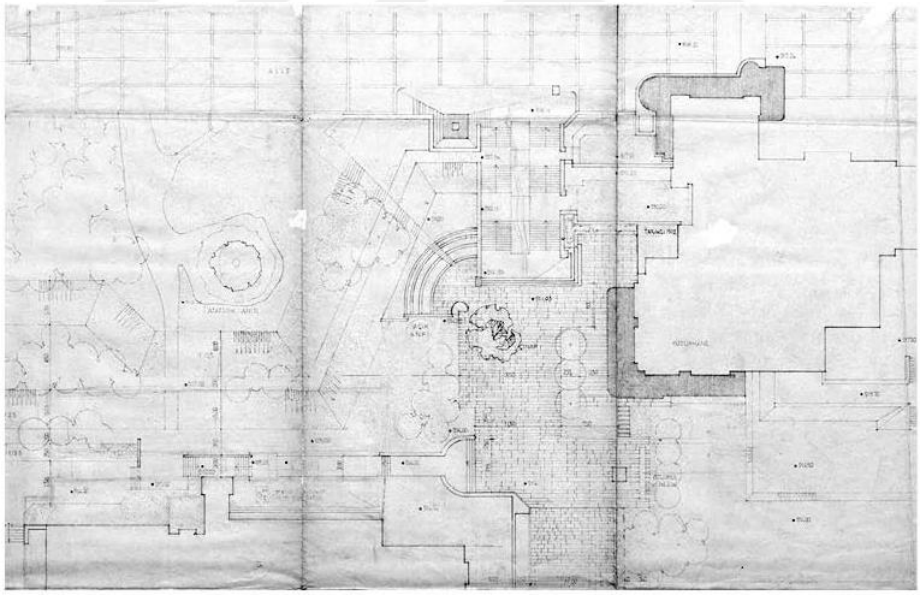


Figure 69. Alley-Rectorate Staircase & Auditorium, drawings by A. Çinici and B. Çinici, 1963

As one of the main landscape elements in the METU Campus, Rectorate Staircase envelops the campus topography. It acts as a connector between the alley and the well-defined open space between the rectorate building and the library buildings. It

features stone tiling and four casted metal lighting elements on its stone retaining walls. On both of its end, there are intermediary platforms separating the staircase from the alley and the rectorate-library open space. At its base, there is an unrealized auditorium design; it utilizes the staircase as its retaining wall on one side and two separate natural stone retaining walls on the other.

While most of the other elements that are handled in this study create a connection between alley or another open space and a building, Rectorate Staircase connects the alley with another open space. Here, reminding Behruz Çinici's interview excerpt from the introduction chapter can be helpful.[46] Volume of the open space between the rectorate and the library is handled similar to how a volume of a building is treated, as a positive shape. The main indicator of this is the utilization of the rectorate staircase as a connection element, similar to how entrance gates or platforms are utilized.

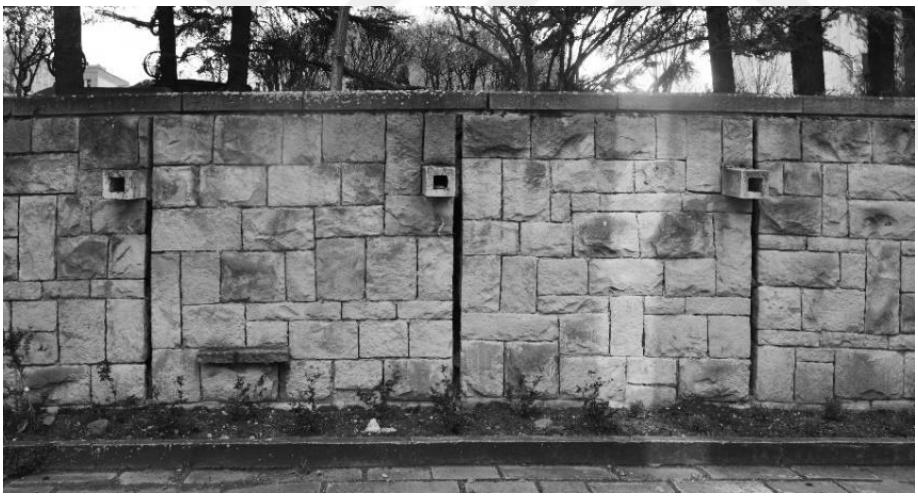


Figure 70. Alley-Rectorate Staircase & Auditorium, photograph by the author, 2022

[46] "The art of creating spaces between buildings is lost today. We see the building as a positive shape used volume. The 'outdoor' established by this volume with the other masses around is generally neglected. I wanted to do this in the forum (the alley). I saw a positive shape in these empty spaces and worked on it by using the tension in the volumes…", an interview excerpt from Behruz Çinici

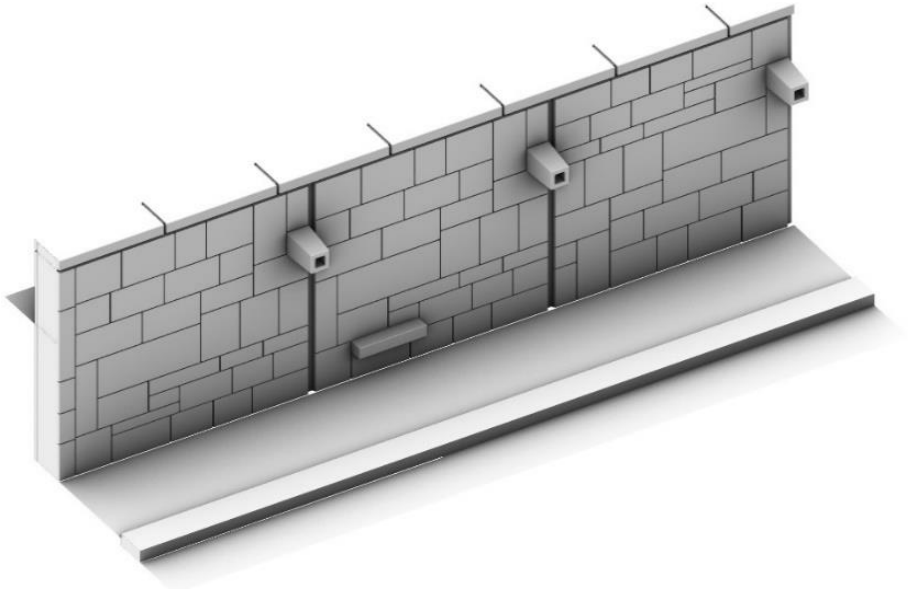


Figure 71. Alley-Rectorate Staircase & Auditorium, 3D model by the author, 2022



Figure 72. Alley-Rectorate Staircase & Auditorium, from Salt Araştırma archives

Between the Library Blocks and the Alley-Rectorate Staircase, a series of retaining walls mediates the level difference between alley and the open area below. These retaining walls features a distinct *çörten*[47] element and a natural stone tiling. These retaining walls also encloses the east side Library's lower entrance platform, along with the pool, which will also be handled in this chapter.

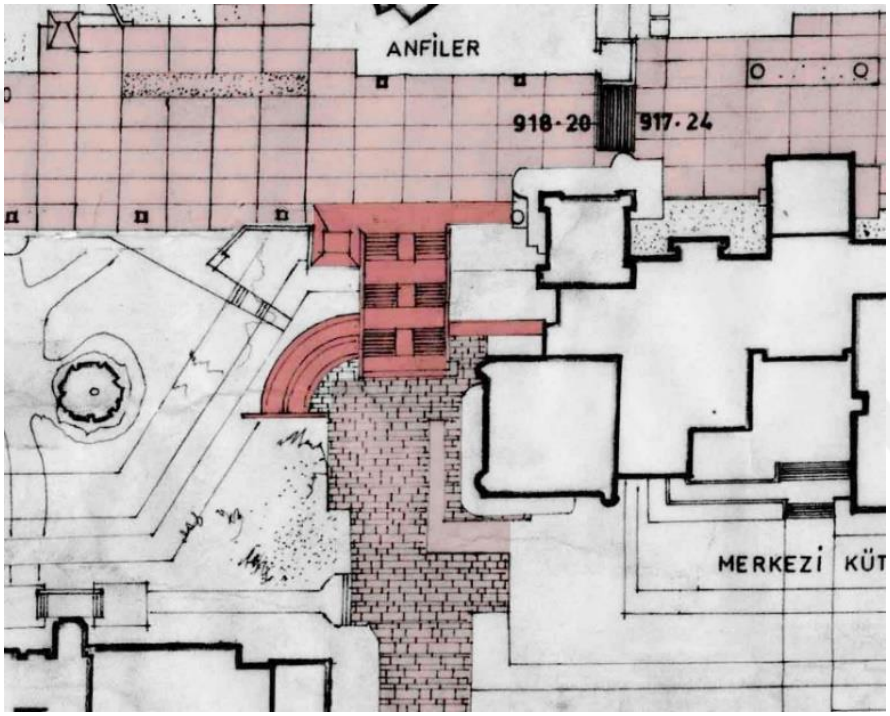


Figure 73. Alley-Rectorate Staircase, Auditorium & retaining walls, annotated by the author

[47] Although the literal translation of "çörten" is "gargoyle", in the METU Campus this term is being used as the water directing elements. These exposed concrete elements are commonly used in the campus in different shapes and sizes. It can be argued that, the name "gargoyle" is a reference to how these elements are used as modern architectural elements of "ornaments" in the campus. However, this discussion exceeds the scope of this thesis.

8. Library Entrance, Fountains and Pools



Figure 74. Library Entrance, photograph by the author, 2022

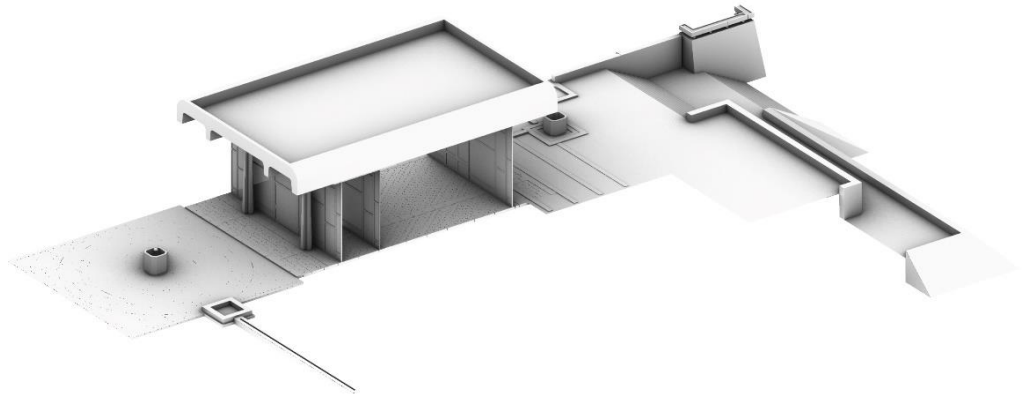


Figure 75. Library entrance, 3D model by the author

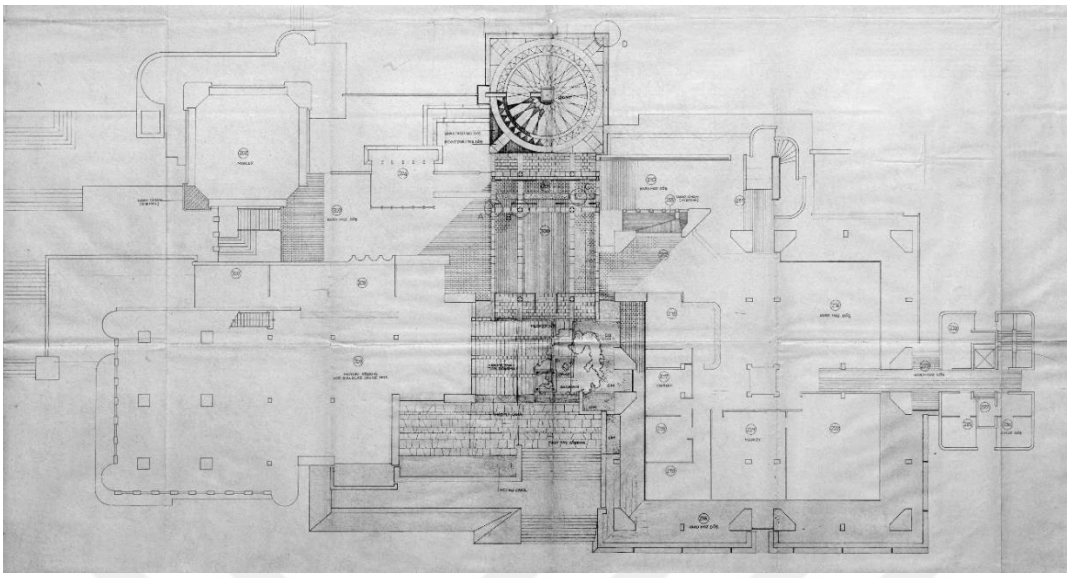


Figure 76. Library, Entrance plan, by A. Çinici and B. Çinici, 1963

Library Entrance is one of the distinct alley-building connections and it is the center of the METU Campus social space. It acts as a connection space that intersects with the alley perpendicularly and goes between the library blocks and envelopes the topography, similar to the rectorate staircase. It consists of series of intricately tiled platforms, pools, fountains, sculpture-like columns and various inclined or rectangular retaining walls. Its borders are blurry in a way that does not allow any categorizations as interior or exterior with its large sculpture-like eave/ceiling, its transparent façade and its continuous platforms and tiling.

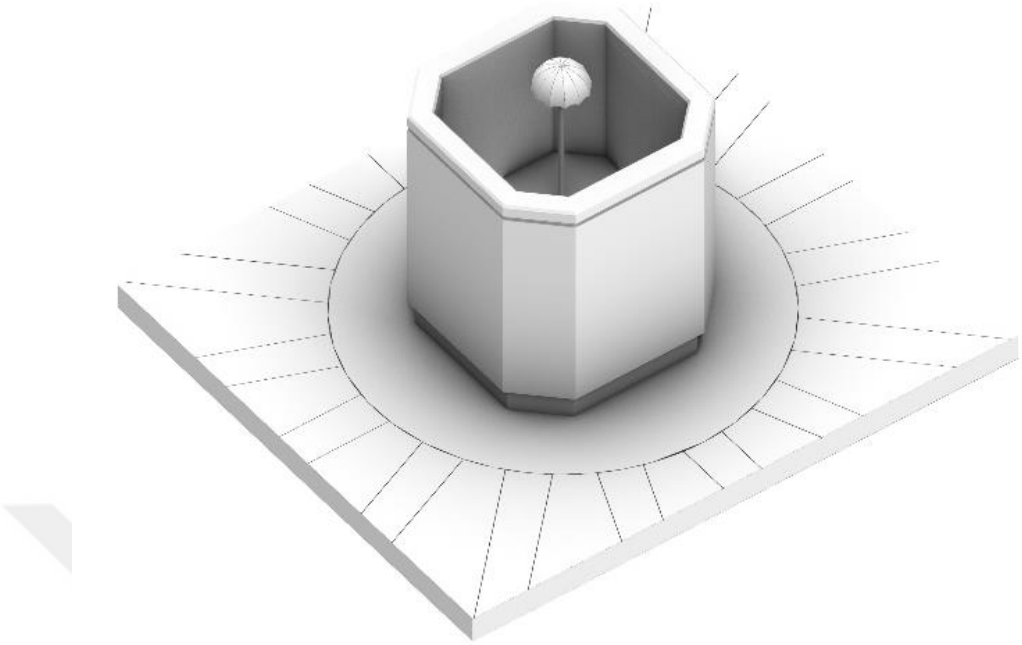


Figure 77. Library Entrance Fountain, 3D model by the author

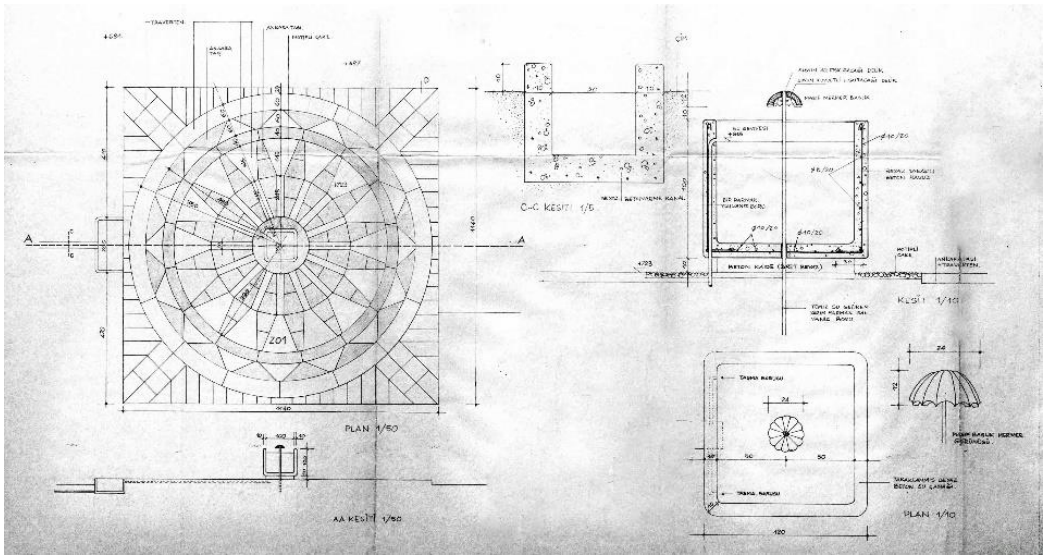


Figure 78. Library entrance platform, drawings by A. Çinici and B. Çinici

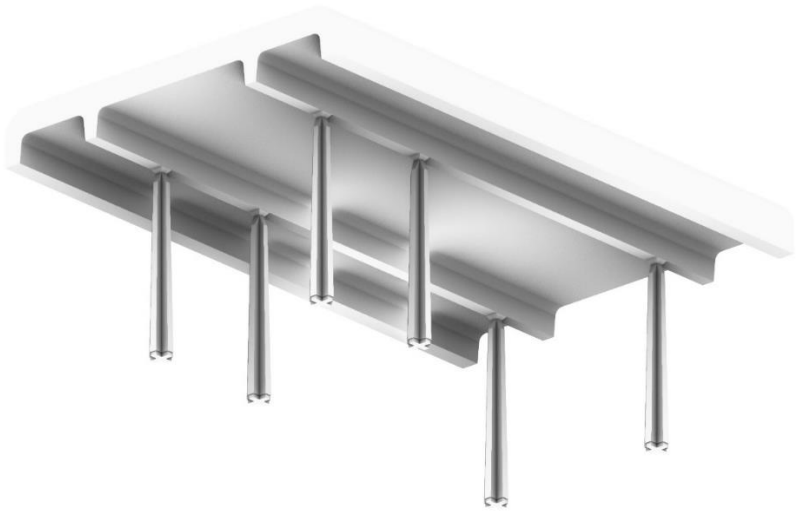


Figure 79. Library, Entrance eave, 3D model by the author

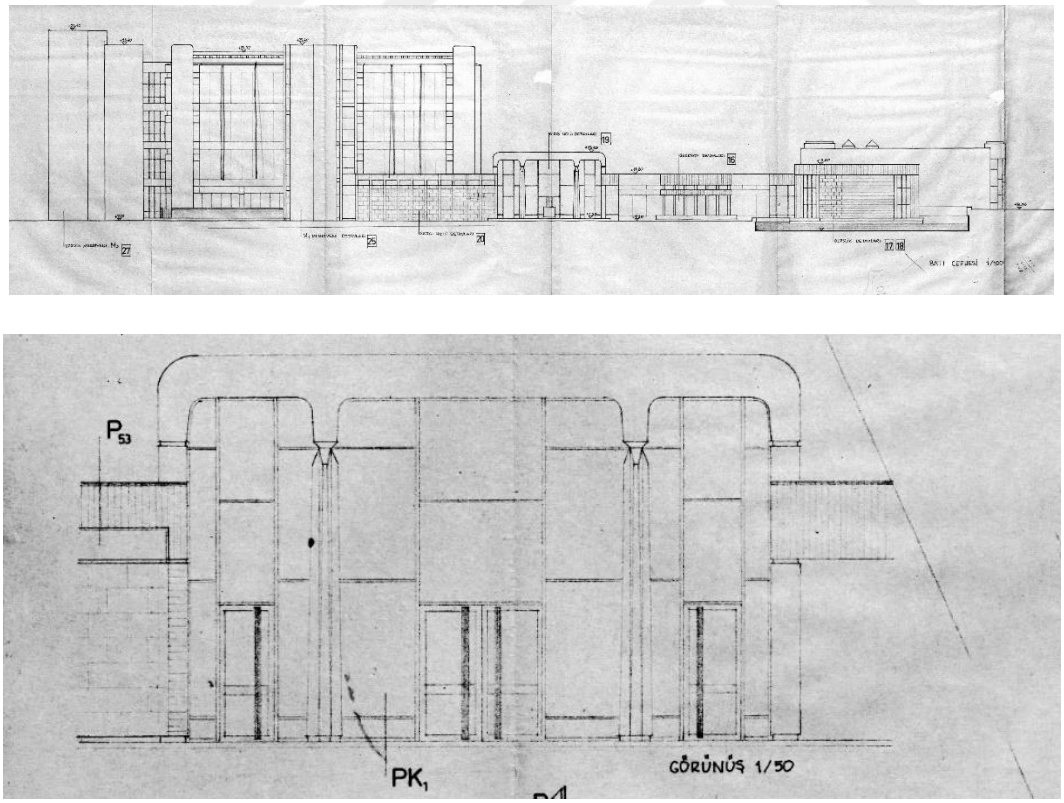


Figure 80. Library entrance, drawings by A. and B. Çinici

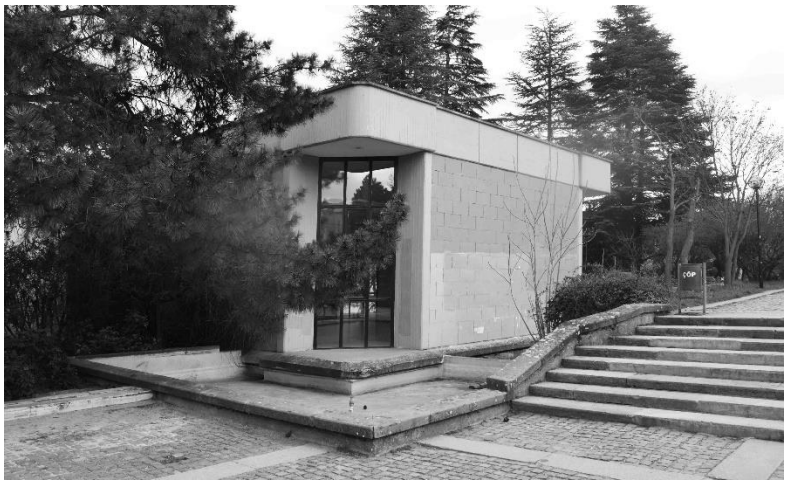


Figure 81. Library entrance pool, photograph by the author, 2022

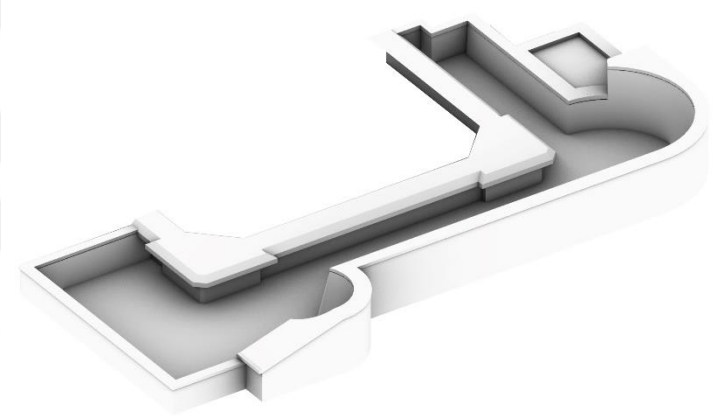


Figure 82. Library entrance pool, 3D model by the author, 2022

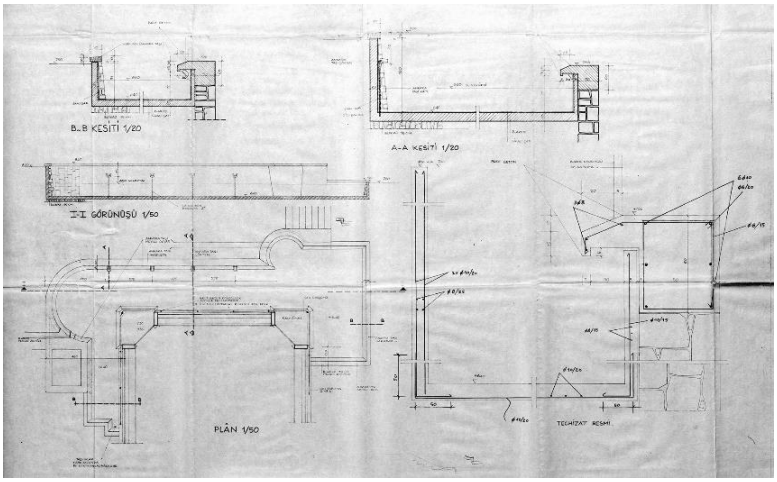


Figure 83. Library entrance pool, drawings by A. and B. Çinici



Figure 84. Library back entrance pool, photohraph by the author, 2022

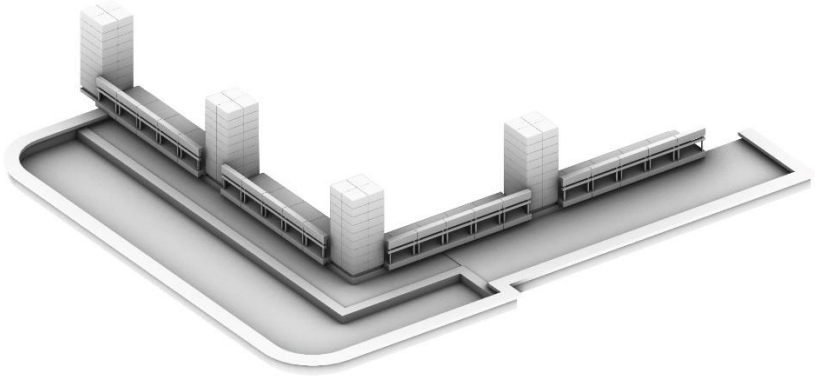


Figure 85. Library back entrance pool, 3D Model by the author

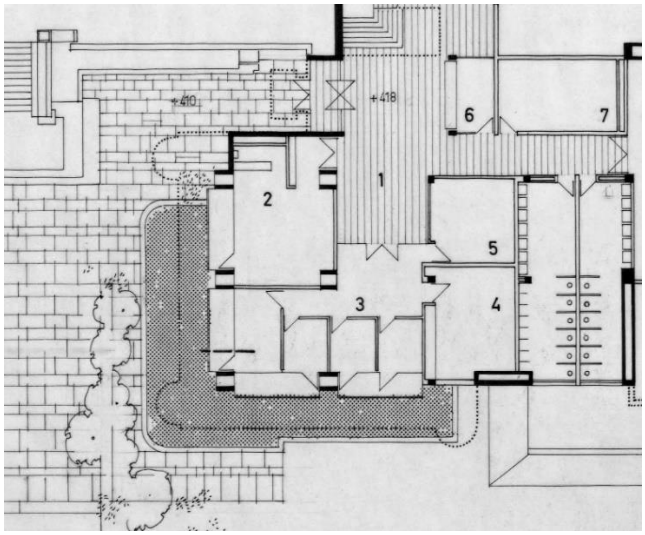


Figure 86. Library back entrance pool, drawings by A. and B. Çinici

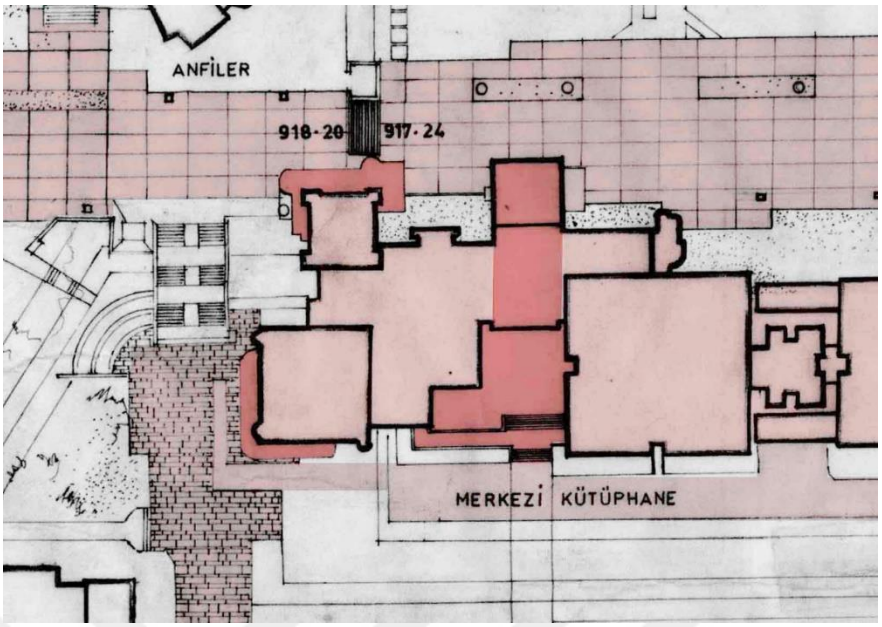


Figure 87. Library from the masterplan, annotated by the author



Figure 88. METU Library area photograph, from Salt Araştırma archives

9. Unrealized Garden between Library and Rectorate Buildings

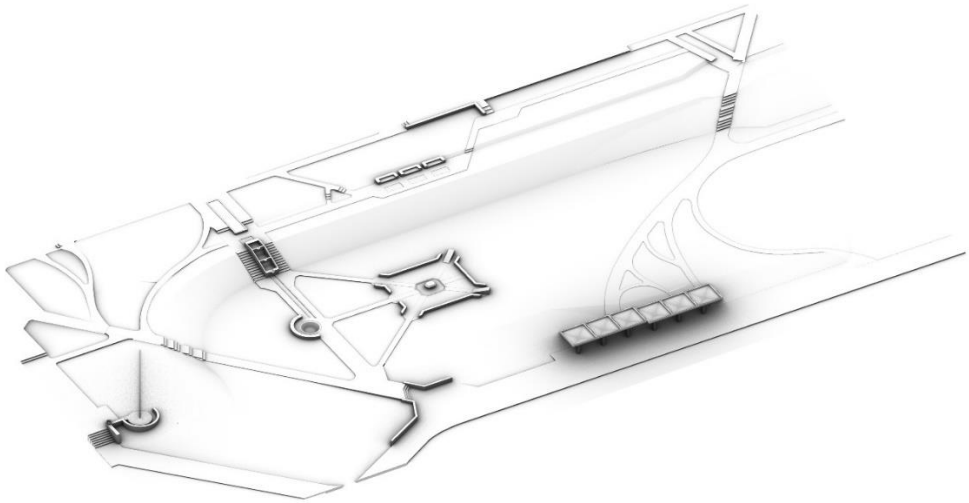


Figure 89. Unrealized garden design between the library and rectorate Buildings, 3D model by the author

Initially, the library main entrance were designed to continue to an unrealized garden area by further enveloping the topography and featuring another series of pools and fountains.

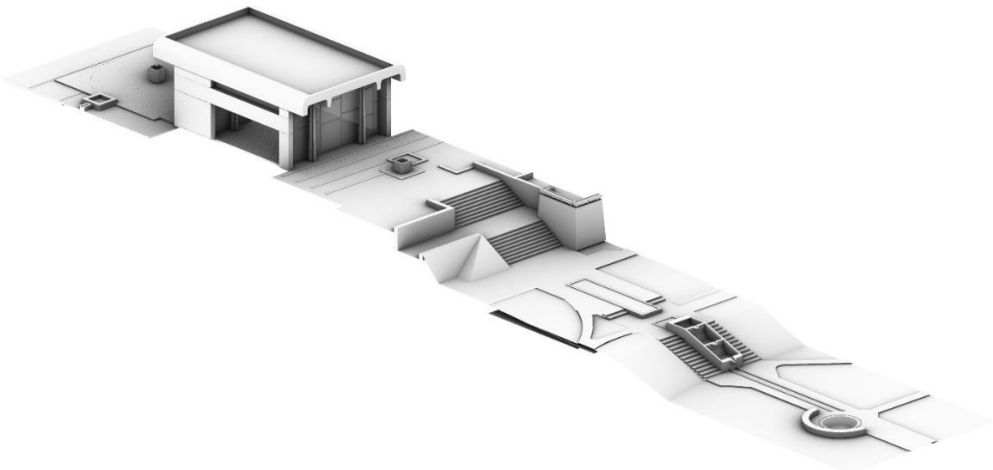


Figure 90. Library entrance and unrealized garden section model, 3D model by the author

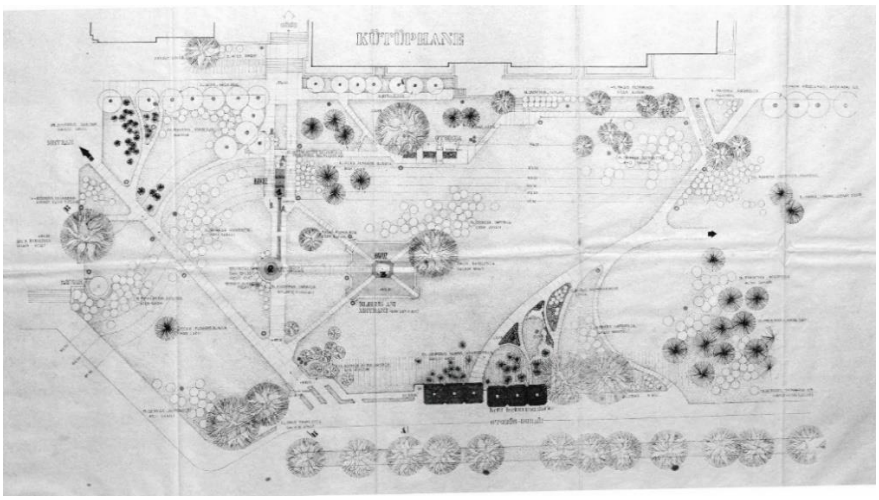


Figure 91. Unrealized garden design, drawings by A. and B. Çinici



Figure 92. Unrealized garden design pools and fountains, 3D model by the author

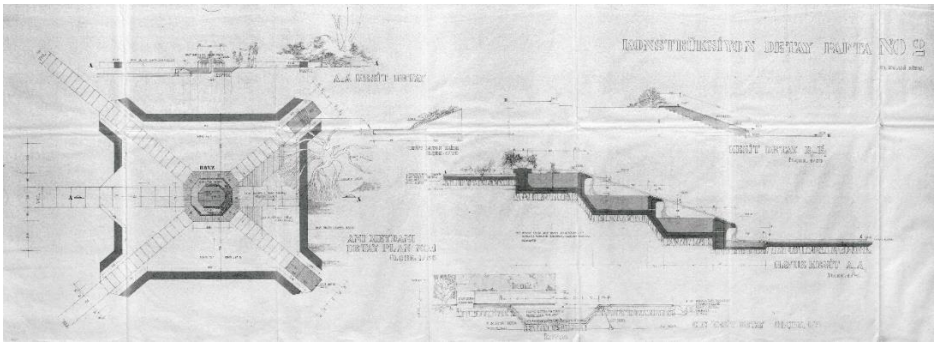


Figure 93. Unrealized garden design pools and fountains, drawings by A. and B. Çinici

This unrealized garden occupies the space between the Library blocks and Rectorate Building Complex. Originally designed as a ceremony area with series of exposed concrete architectural elements, it is currently a grove. The design features three pools with fountains, which are all connected with one another. Besides that, it features three concrete seating elements and a bus stop that is defined with six exposed mushroom structures.

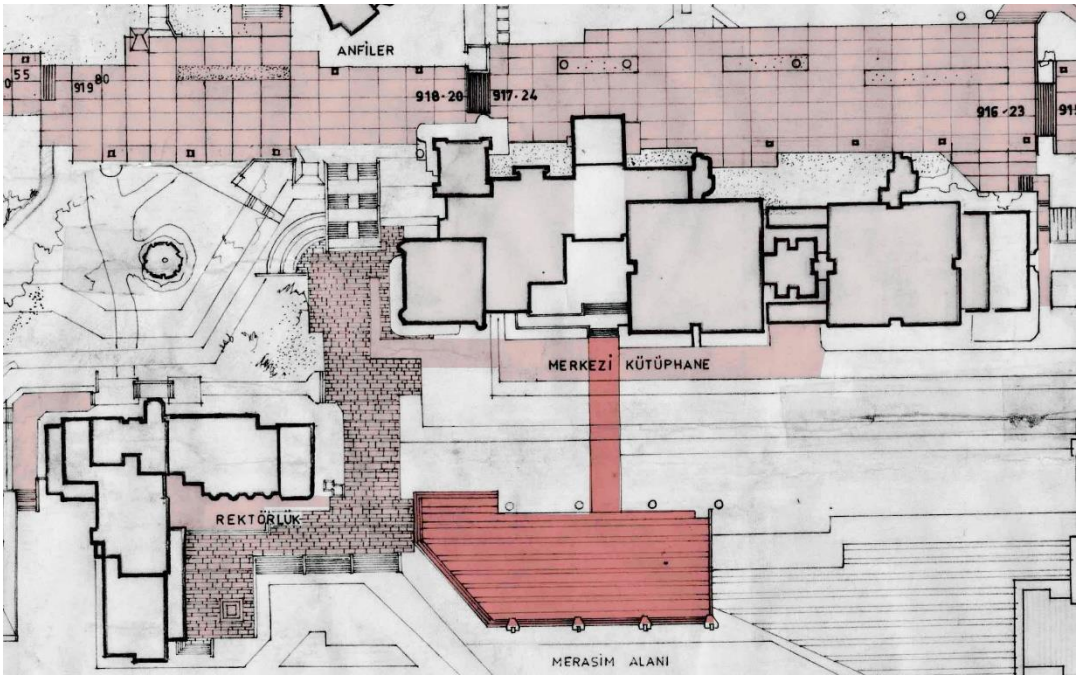


Figure 94. Unrealized garden area from masterplan

10. Rectorate



Figure 95. Rectorate building complex, photograph by the author, 2022

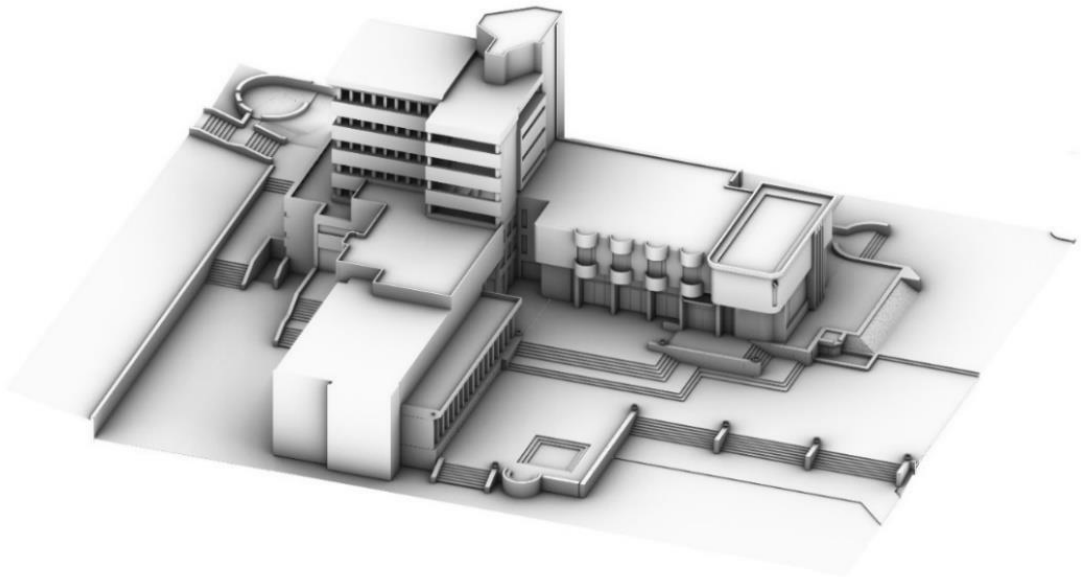


Figure 96. Rectorate building complex, 3D model by the author

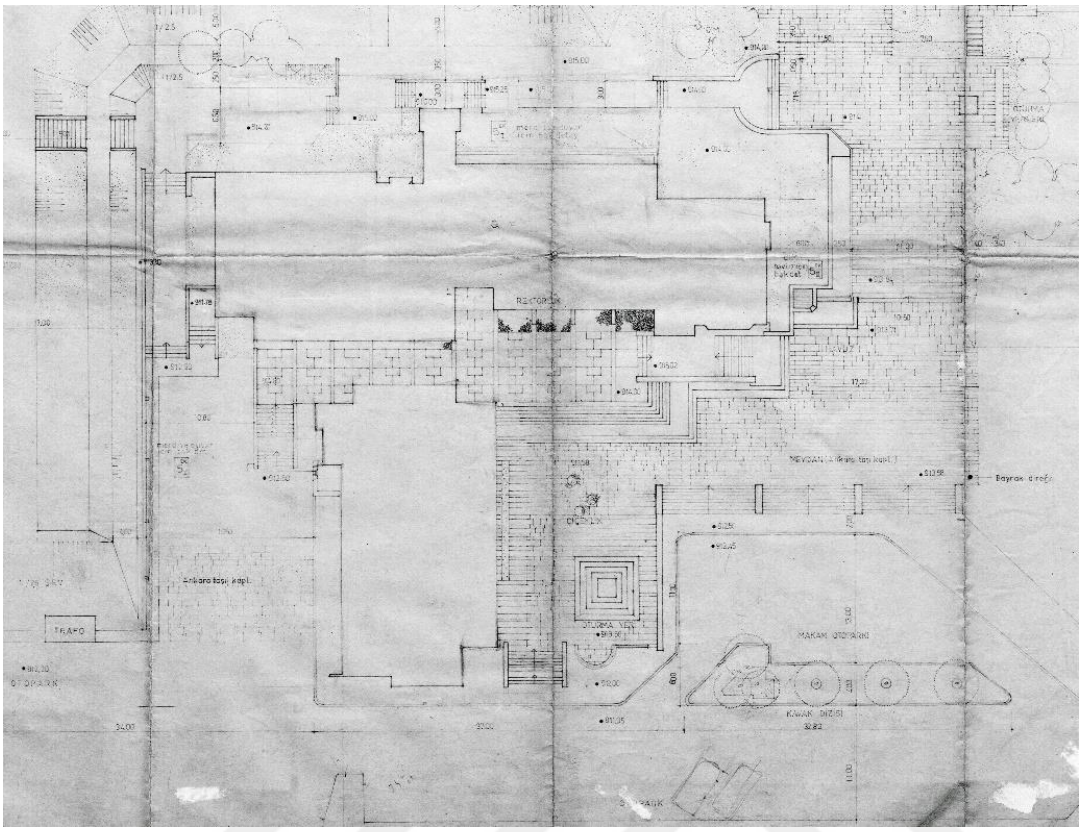


Figure 97. Rectorate building complex, drawings by the A. and B. Çinici

Rectorate Entrance consists of a series of platforms and staircases, which are populated with pools, retaining walls, arcades, a reinforced concrete seating element, a garden and a sculptural flagpole.

Rather than presenting these elements separately, they are presented under the headpiece “Rectorate”, as they are highly integrated.

The first element is the integrated pool and staircase at the west side of the rectorate building and directly south of the alley-rectorate staircase. It also functions as a retaining wall for the Rectorate Building. It features a natural stone pool and fountain, an inclined natural stonewall which transforms into a half circle platform with a staircase.



Figure 98. Rectorate pool, phtograph by the author, 2022

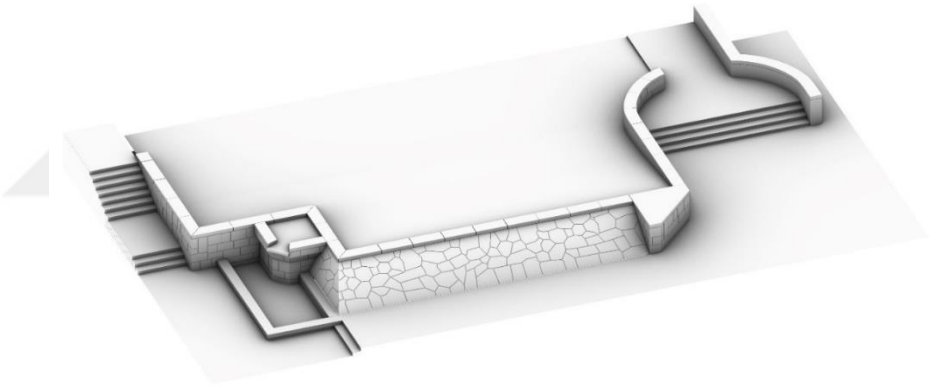


Figure 99. Rectorate pool, 3D model by the author

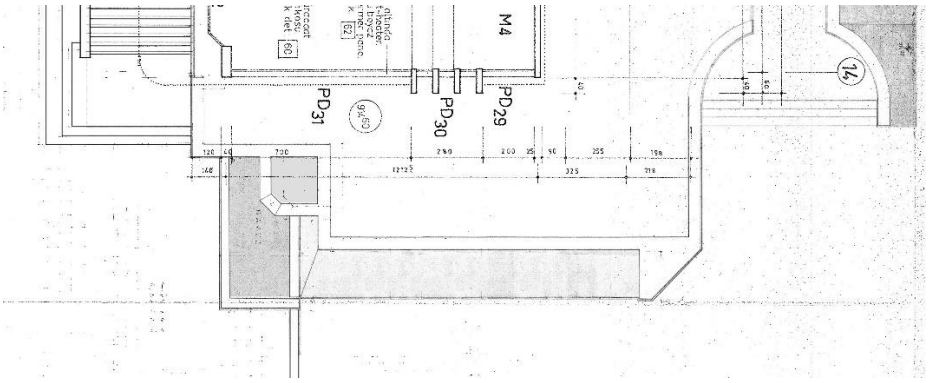


Figure 100. Rectorate pool, drawings by A. and B. Çinici

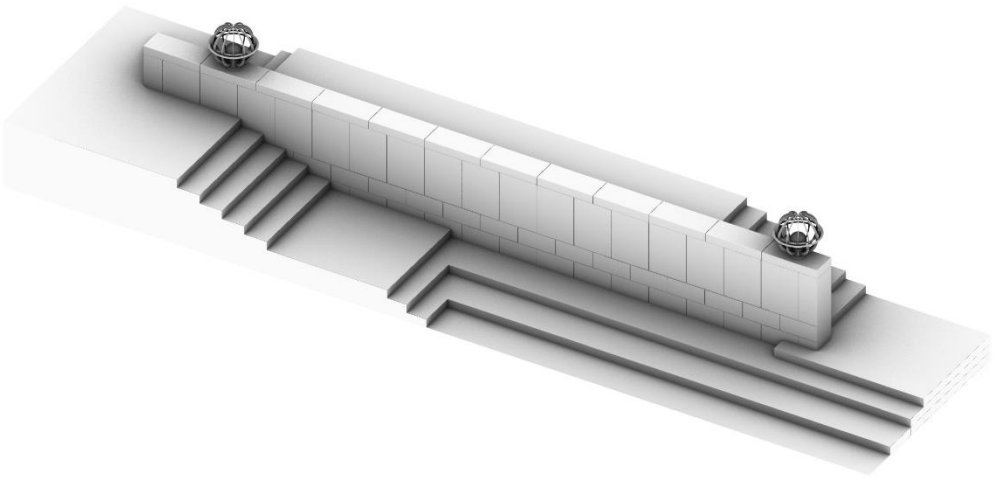


Figure 101. Rectorate entrance retaining wall, 3D model by the author

Rectorate Front Entrance consists of a series of platforms and staircases around a stone retaining wall, with two casted metal lighting elements on this retaining wall.

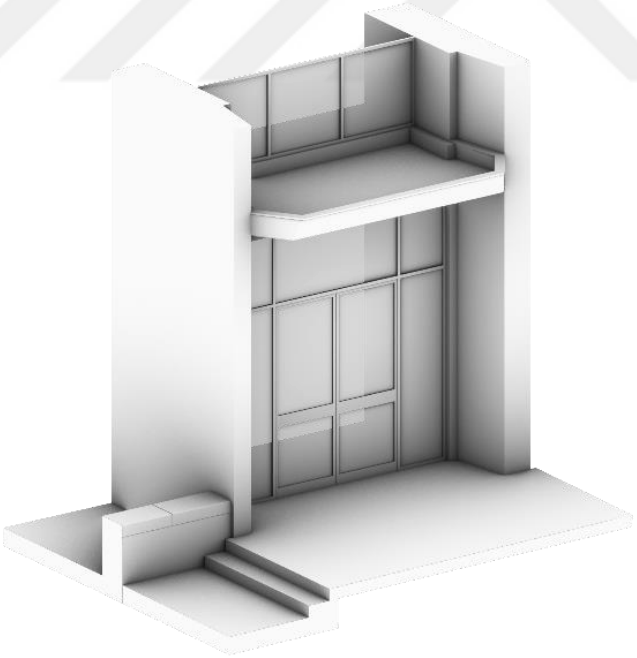


Figure 102. Rectorate entrance gate, 3D model by the author

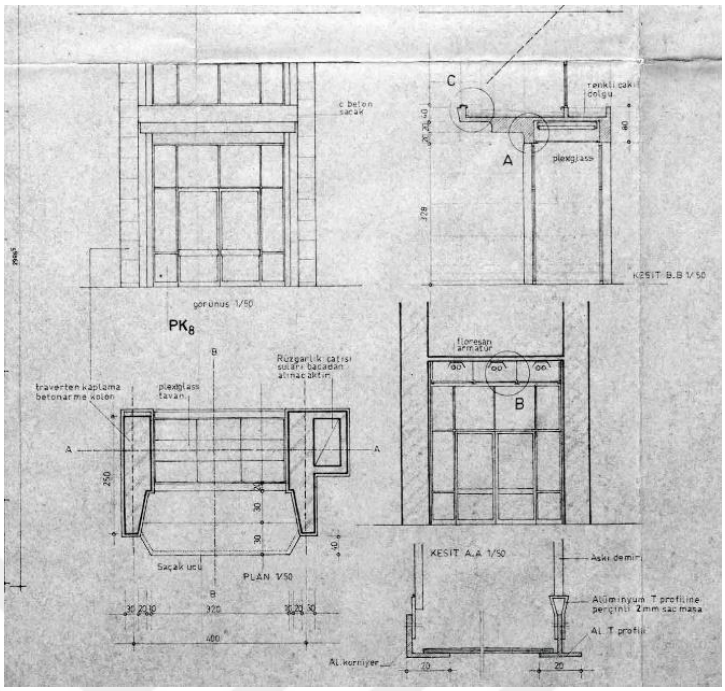


Figure 103. Rectorate Entrance gate, drawings by A. and B. Çinici

Although it is hidden for the most part, the entrance itself features a similar eave design to that of many other entrances in the METU Campus.

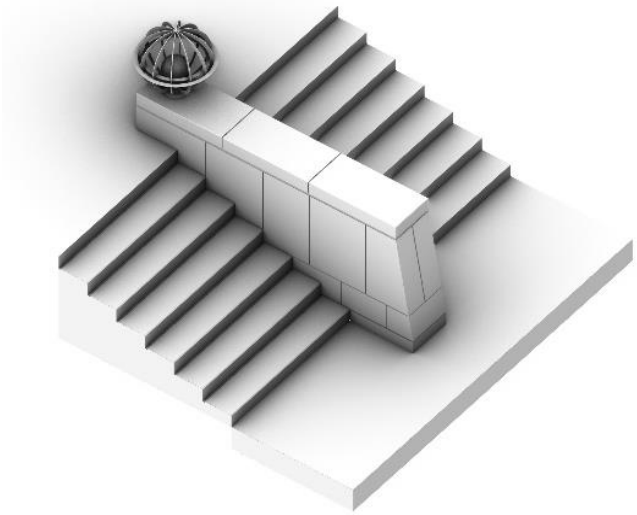


Figure 104. Rectorate retainign wall and lighting unit, 3D model by the author



Figure 105. Rectorate retainign wall and lighting unit, photograph by the author, 2022

Another distinct object is retaining wall with the casted metal lighting element, which is situated at the staircase of the rectorate platform that connects to the main automobile circulation of the METU Campus.

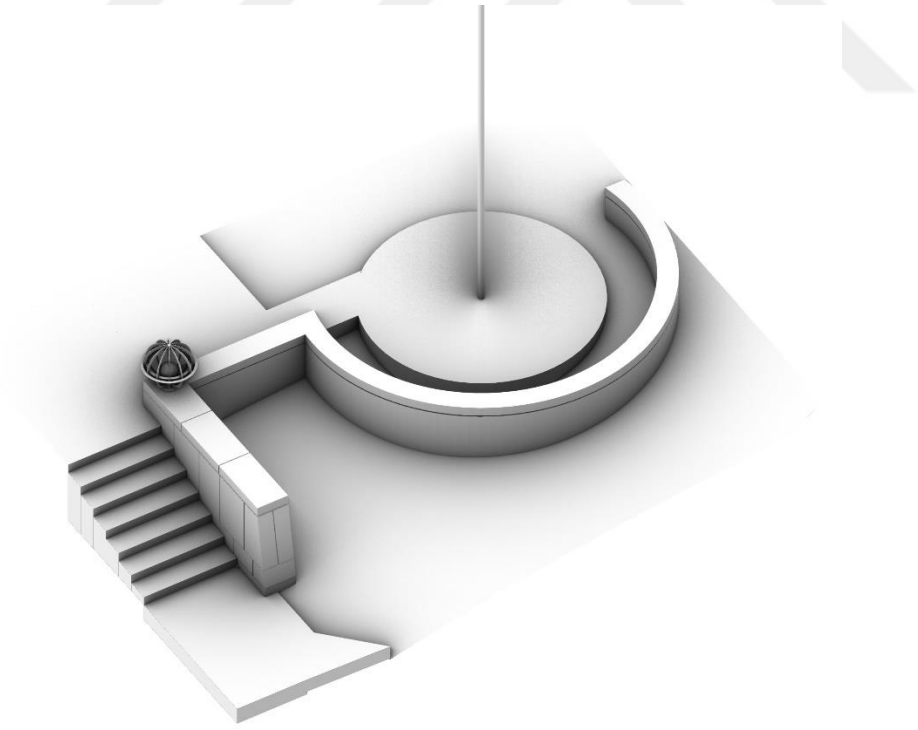


Figure 106. Rectorate unrealized resign of retainign wall and lighting unit with flag pole, photograph by the author, 2022

The third one of these retaining walls also forms the sculptural flagpole. However, this design was not realized.



Figure 107. Rectorate arcades, photograph by Ege Doğan, 2022

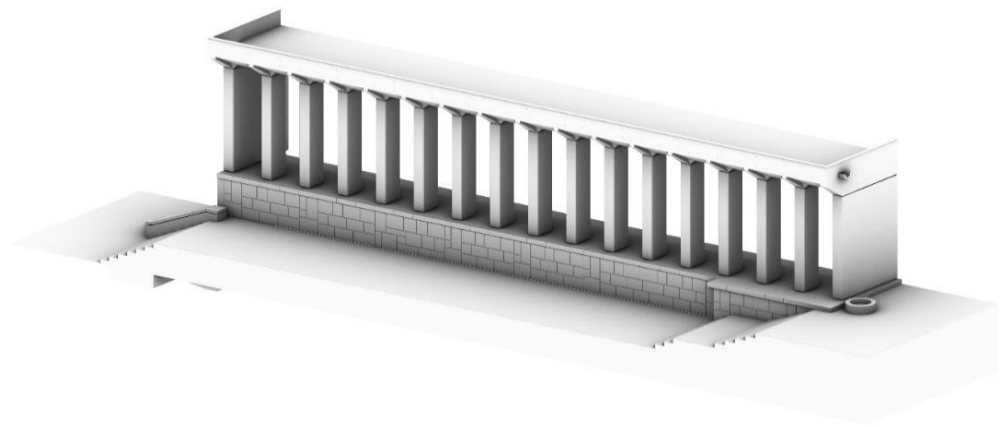


Figure 108. Rectorate arcades, 3D model by the author

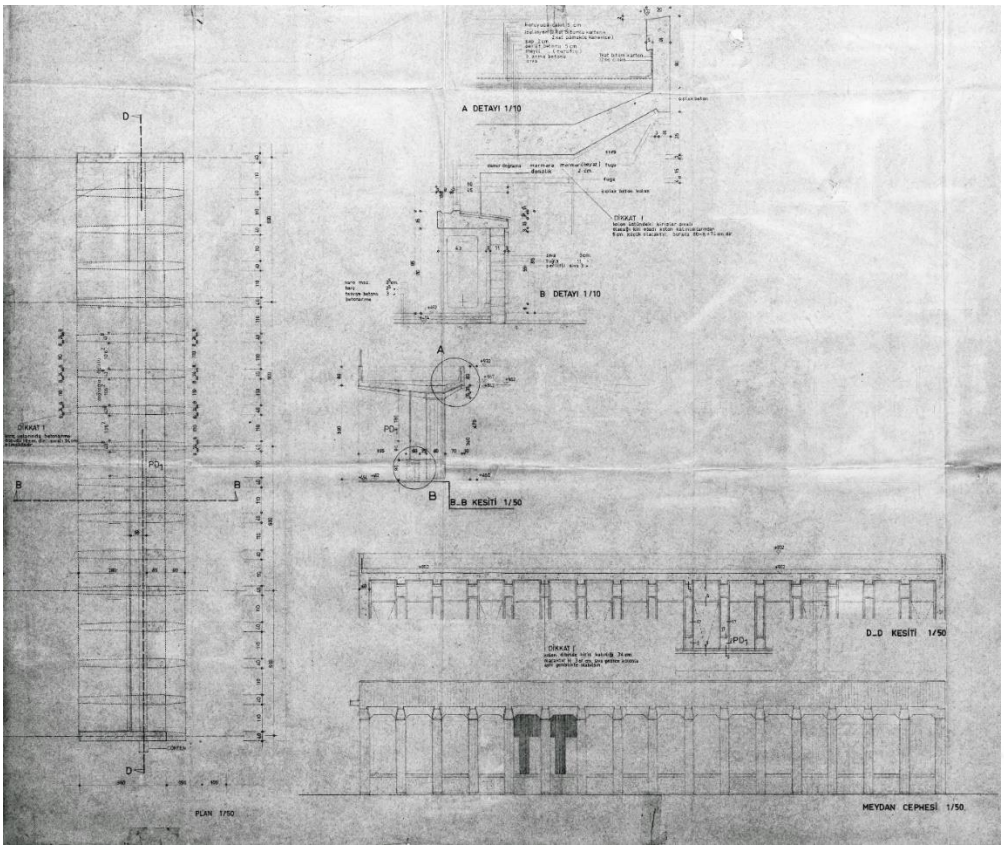


Figure 109. Rectorate arcades, drawings by A. and B. Çinici

A series of exposed concrete columns forms an arcade, which defines the south-side border of the open area in front of the Rectorate Building Complex. This arcade features two *çörten* elements at the each end of this arcade, which actually is the façade of the secondary block of the Rectorate Buidling Complex, that hauses the student affairs office. At the north end of the arcade, there is an exposed concrete flower tub, very similar to the other flower tubs featured in the campus.



Figure 110. Rectorate back entrance, photograph by the author

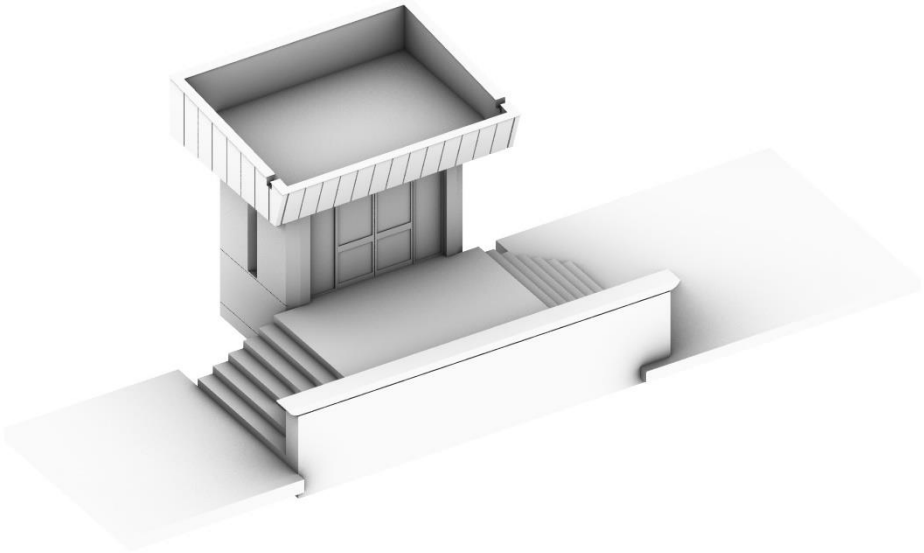


Figure 111. Rectorate back entrance, 3D model by the author

Rectorate Building’s back entrance features an exposed concrete eave with intricate joint gaps and two vitray windows on the both sides. Its reinforced concrete walls continues to defined the vectical circulation space inside the building. At its front, there is a raised platfrom and a natural stone retainign wall.



Figure 112. Staircase and pool between rectorate and cafeteria, photograph by the author, 2022

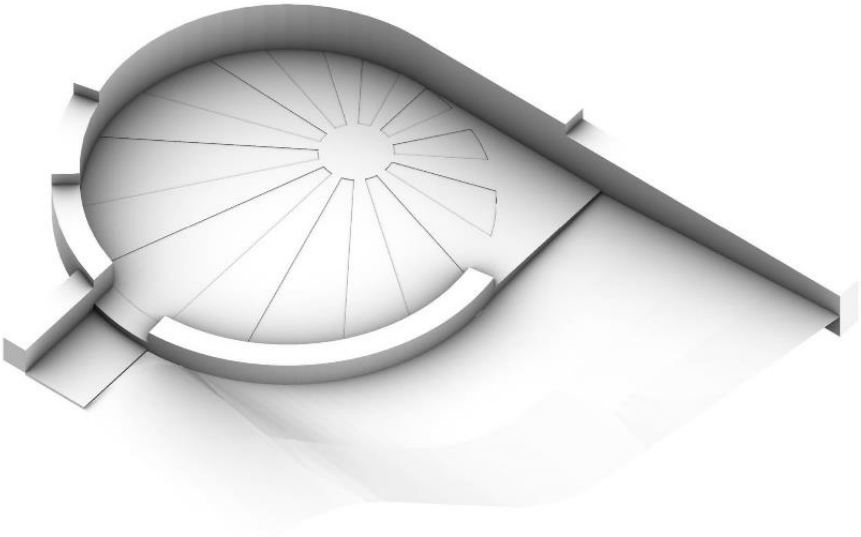


Figure 113. Pool between rectorate and cafeteria, 3D model by the author

The last element that is featured in the rectorate area is the hidden fountain at the back side of the Rectorate Building Complex, adjecent to the staircase going up to the unrealized Cafeteria Academic Staff Entrance, which is now used as a personnel entrance. The pool features an intricate floor tiling with ankara stone on pebble stones, a natural stonecircular retaining wall that changes its levels and a subtle natural stone seating.

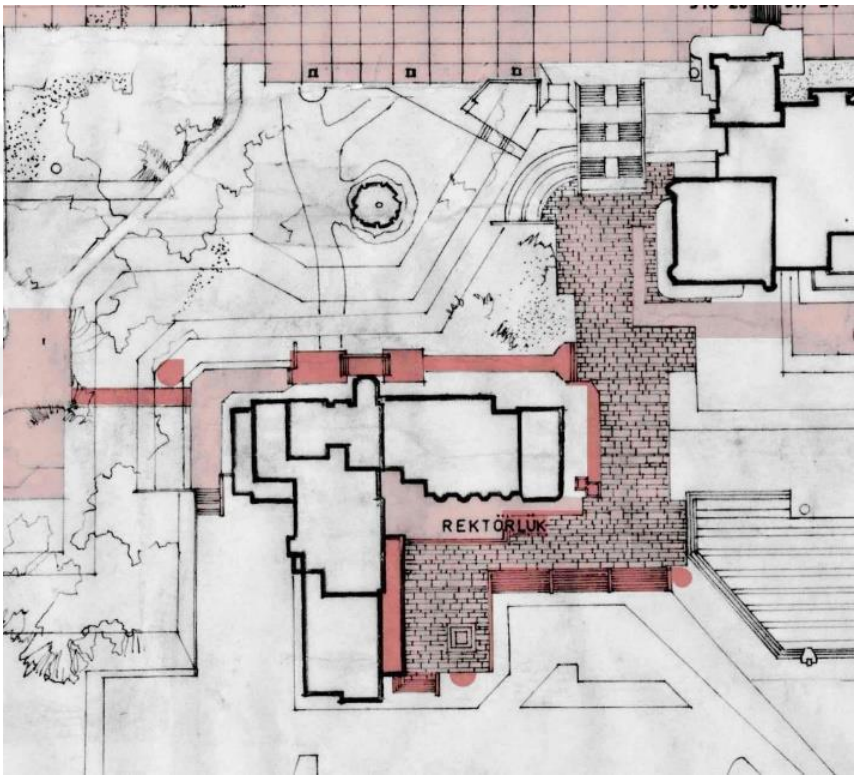


Figure 114. Rectorate from masterplan, annoated by the author

11. Library Back Entrance



Figure 115. Library back entrance, photograph by the author, 2022

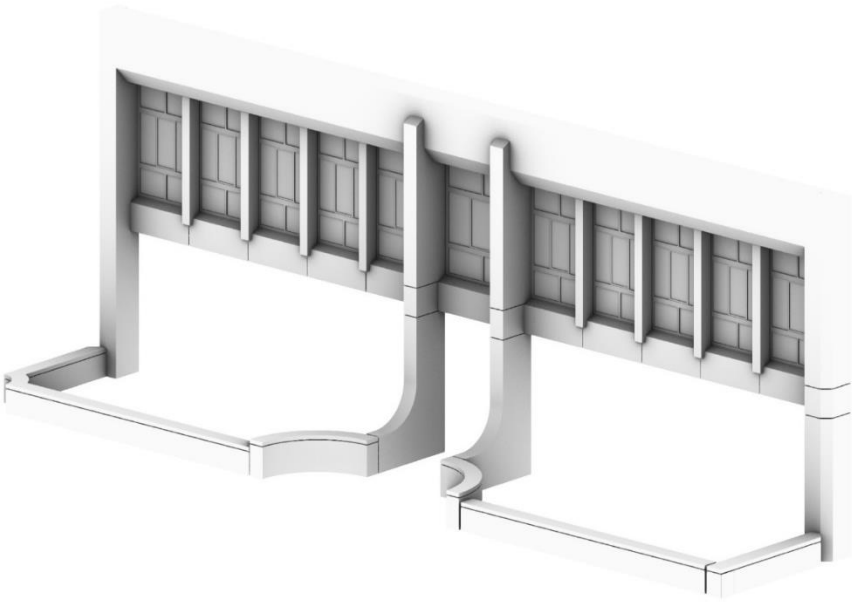


Figure 116. Library back entrance, 3D model by the author

The back entrance of the Library Blocks is defined with a sculptural façade with intricate joint gaps, connected to the alle with a staircase with natural stone retaining walls. However, it is not realized as drawn here. It has short retaining walls that makes a circular gesture and transforms into the main columns of the façade. Each of these also features a casted metal lighting element. At the both sides of the Entrance block, there is a series of vitray windows that is very similar to the other vitrays that are displayed in this study. It has an intricate floor tiling that is composed of two sections, one is with a series of smaller stones inner side of the retaining walls and second one with a larger stones outer side of the retaining walls. The second part tiling is not realized.

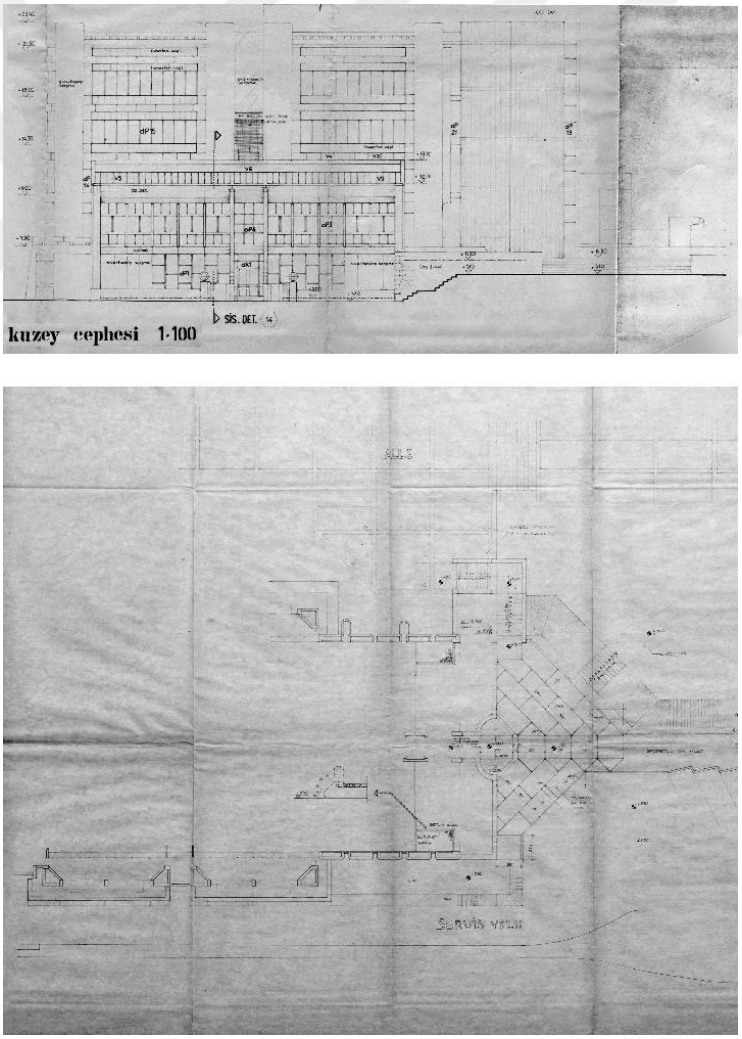


Figure 117. Library back entrance from masterplan, annotated by the author

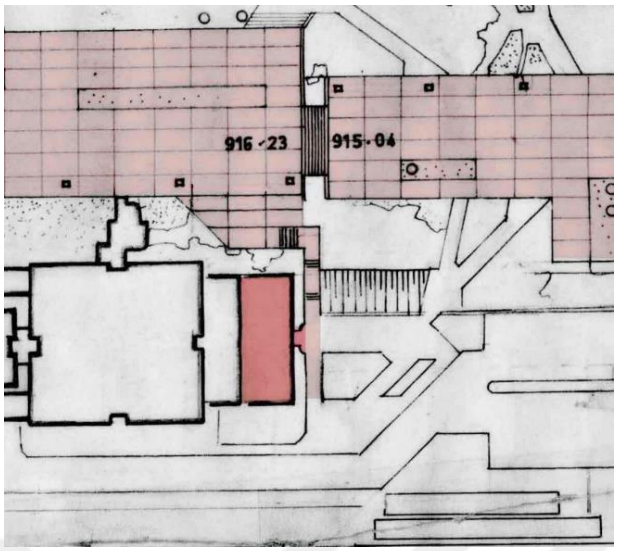


Figure 118. Library back entrance from masterplan, annotated by the author

16. Faculty of Arts and Sciences Entrance Platforms & Arcades



Figure 119. *Physics entrance platforms and arcades, photograph by the author, 2022*

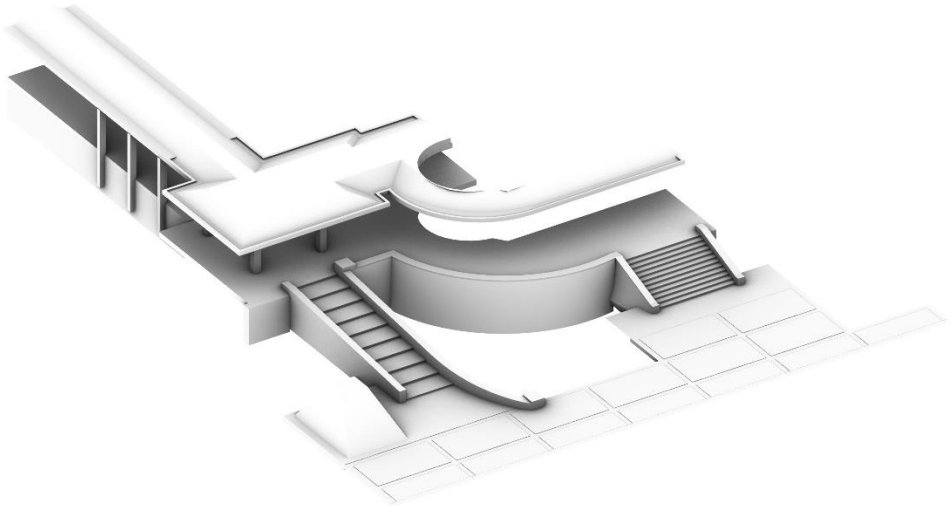


Figure 120. Physics entrance platforms and arcades, 3D model by Ömer Faruk Ağırsoy

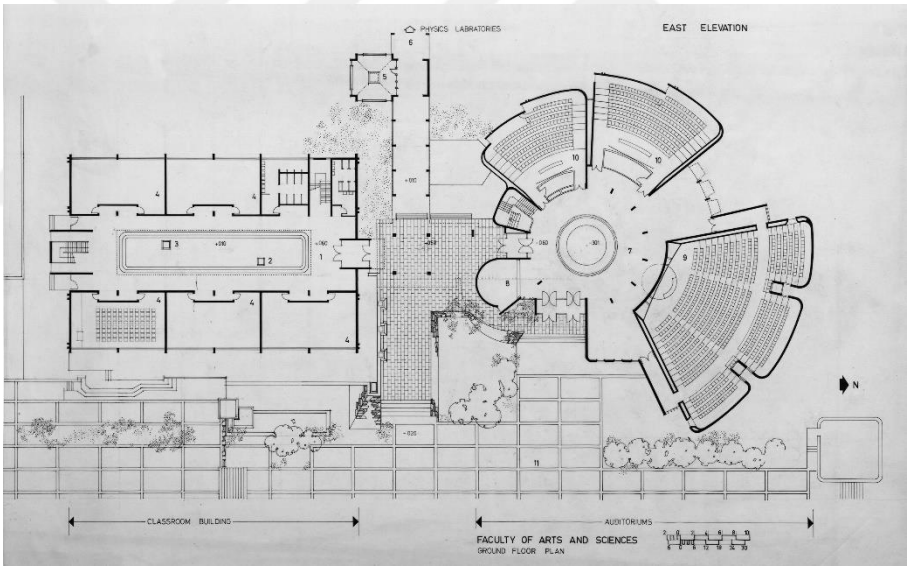


Figure 121. Physics entrance platforms and arcades, drawings by A. and B. Çinici

Faculty of Arts and Sciences building complex consists of three buildings; Faculty of Arts and Sciences, Physics Amphitheaters Building and Physics Laboratories, which all of them connected with each other and with the alley by a series of arcades and platforms. The physics Amphitheaters Building is one of the distinct buildings

of the METU Campus and is the only building that is set in a circular manner. The entrance arcades and platforms takes reference from this and feature distinct circular elements.

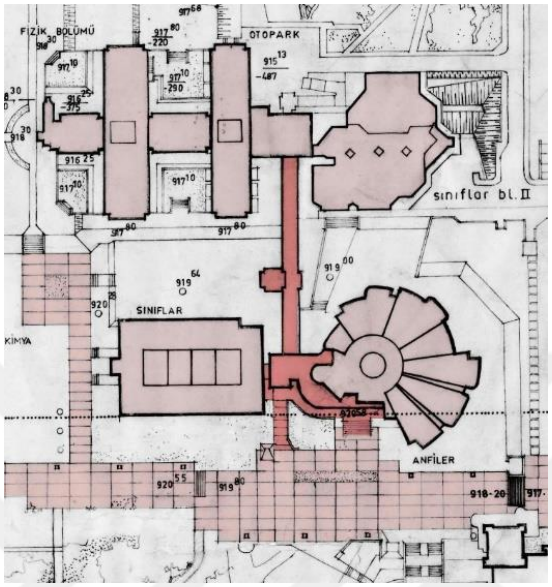


Figure 122. Physics entrance platforms and arcades from the masterplan

17. Architecture Faculty Entrance Arcades, Pools & Platforms



Figure 123. Architecture Faculty entrance platforms, arcades, pools and fountains, photograph by the author ,2022



Figure 124. Architecture Faculty entrance platforms, arcades, pools and fountains, photograph by the author ,2022



Figure 125. Architecture Faculty entrance platforms, arcades, pools and fountains, from Salt Araştırma archives

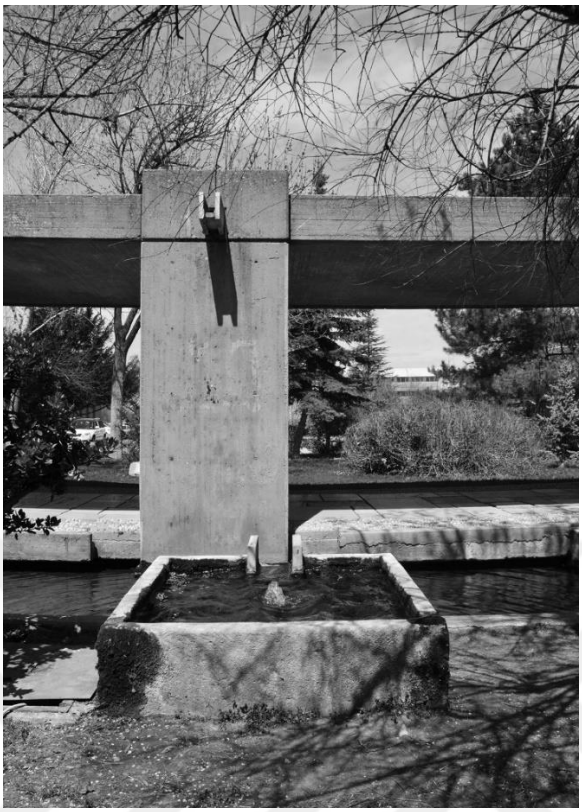


Figure 126. Architecture Faculty entrance platforms, arcades, pools and fountains, photograph by the author ,2022

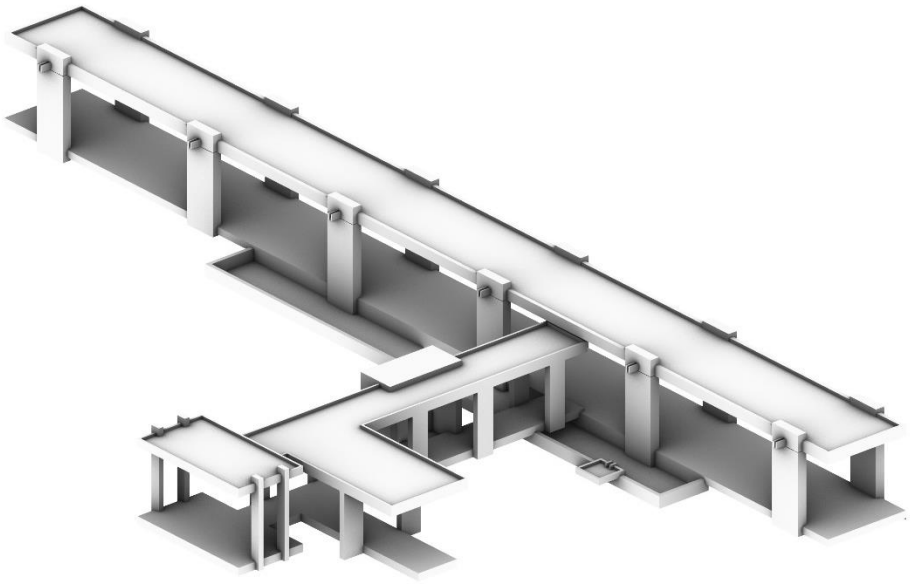


Figure 127. Architecture Faculty entrance platforms, arcades, pools and fountains, 3D model by the author

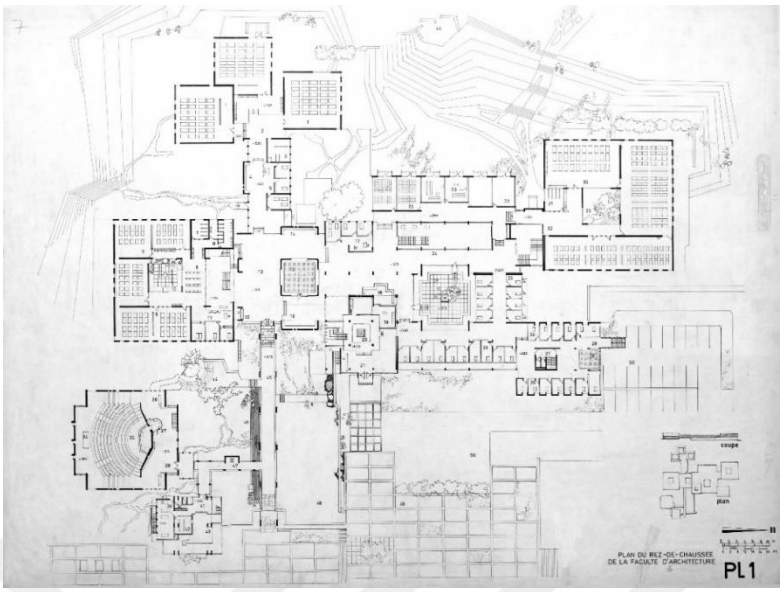


Figure 128. Architecture Faculty, drawings by A. and B. Çinici

Architecture Faculty is a three buildings complex, consisting of the main faculty building, the faculty amphitheatre and the faculty museum. A series of intricately design arcades, tiling, pools, fountains and an open amphitheatere connects these three faculty buildings and to the alley. Other than the open amphitheatere, the architecture faculty arcades are fully realized and acts as the main open space of the faculty area and one of the most distinct spaces of the METU Campus.



Figure 129. Architecture Faculty from the masterplan

18. Architecture Faculty Back Entrance Gate



Figure 130. Architecture Faculty back entrance, photograph by the author

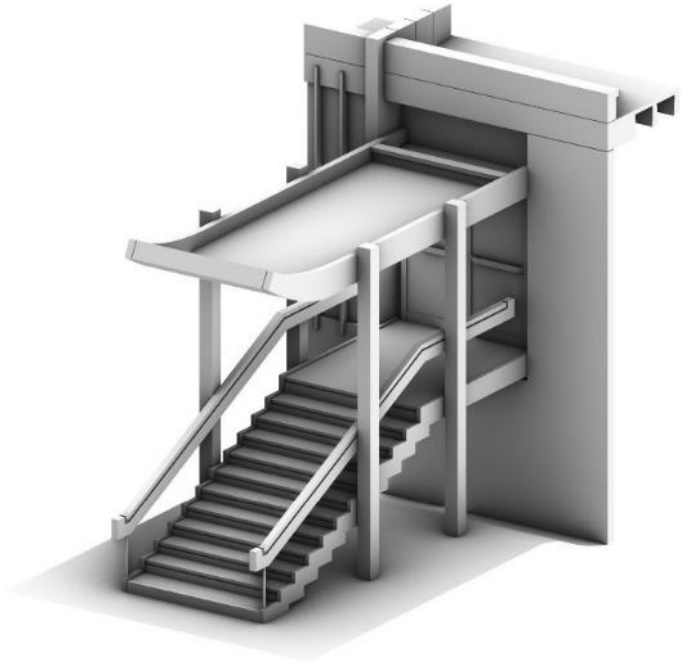


Figure 131. Architecture Faculty back entrance, 3D model by the author

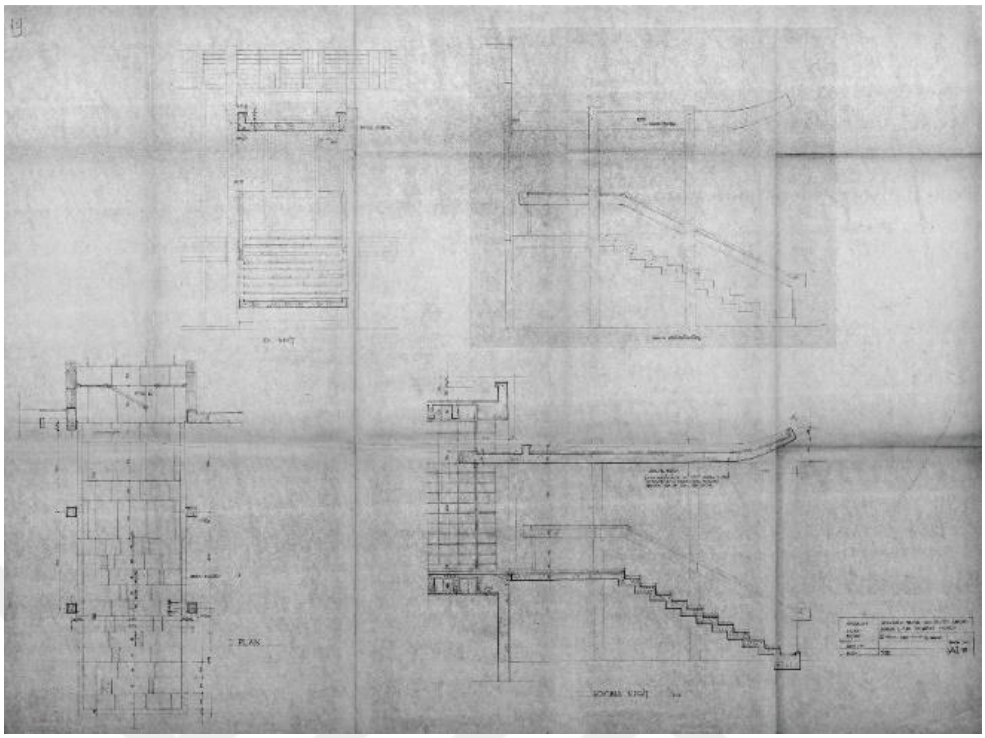


Figure 132. Architecture Faculty back entrance, drawings by A. and B. Çinici

Architecture Faculty back entrance is a sculptural exposed concrete entrance gate that is similar to the previous examples listed in this study.



Figure 133. Architecture Faculty back entrance from the masterplan

19. Administrative Sciences Courtyard



Figure 134. Administrative Sciences courtyard, photograph by the author, 2022

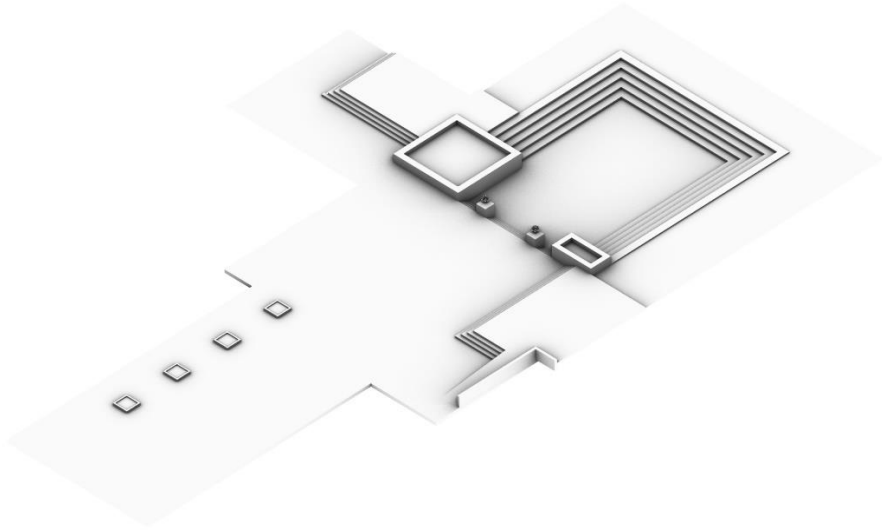


Figure 135. Administrative Sciences courtyard, 3D model by the author

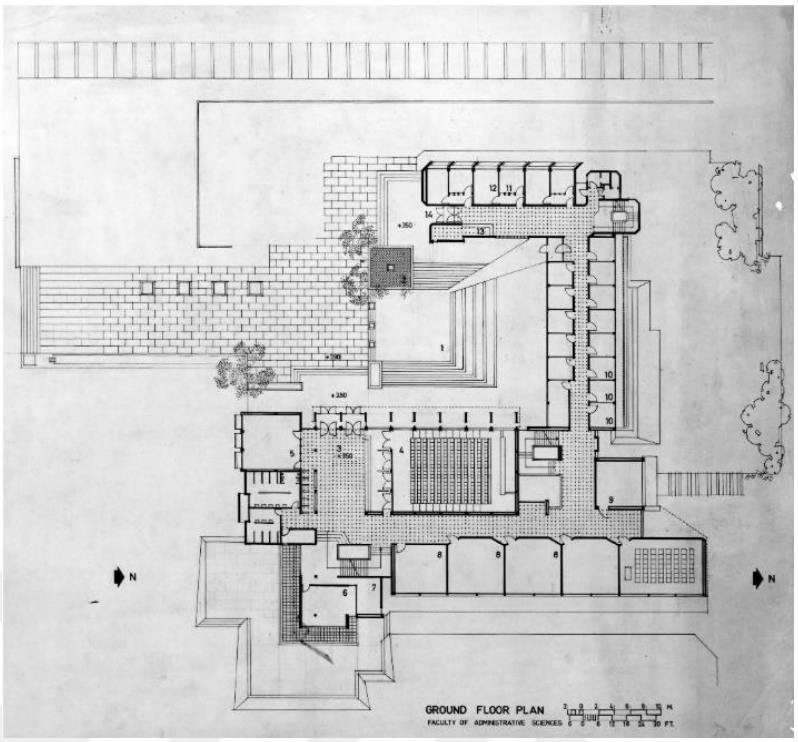


Figure 136. Administrative Sciences, drawings by A. and B. Çinici

The Alley ends with an enclosing gesture defined by the Administrative Sciences Faculty courtyard. This courtyard features an amphitheater, a pool, a fountain, several exposed concrete flower tubs and intricate floor tiling.

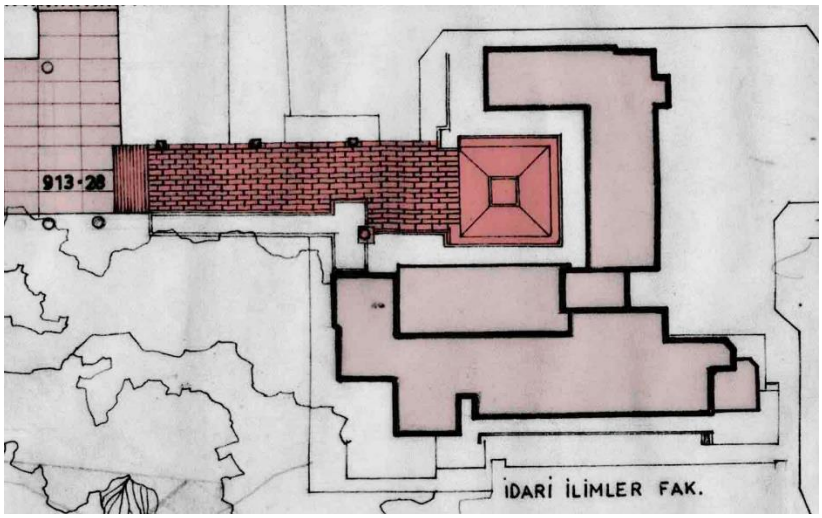


Figure 137. Administrative Sciences from the masterplan

20. Central Engineering Building Entrance Platform



Figure 138. Central engineering entrance platfrom, photograph by Ege Doğan, 2022

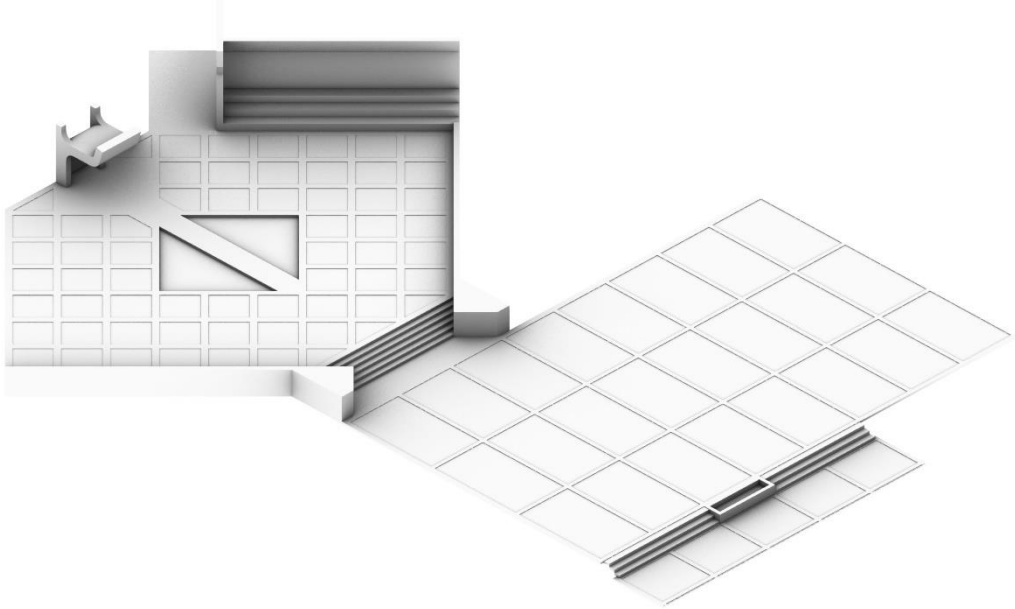


Figure 139. Central engineering entrance platfrom, 3D model by Ibrahim Ekici

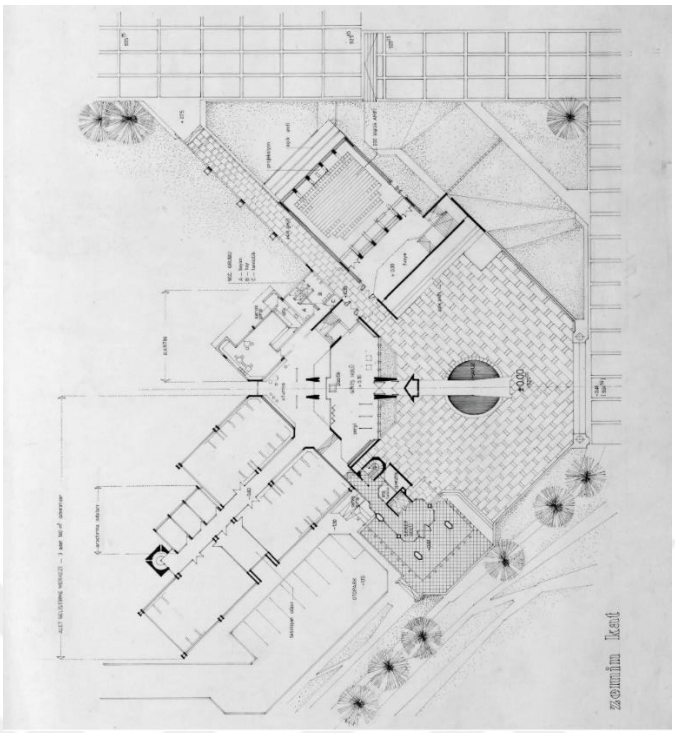


Figure 140. Central engineering building, drawings by A. and B. Çinici

Central engineering building courtyard is defined by a raised platform, which features a pool, a bridge and an open amphitheater. All of these further enclosed by the engineering buildings on both sides.

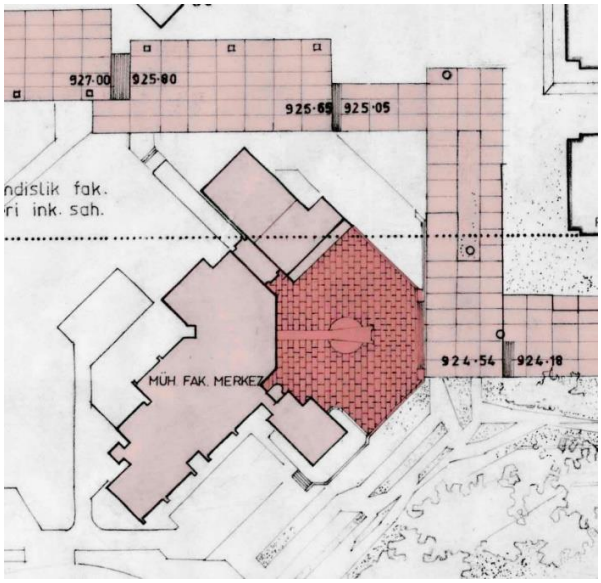


Figure 141. Central engineering building from the masterplan

21. Electric and Electronics Department D Block Entrance



Figure 142. Electric and Electronics department D block entrance, photograph by the author, 2022

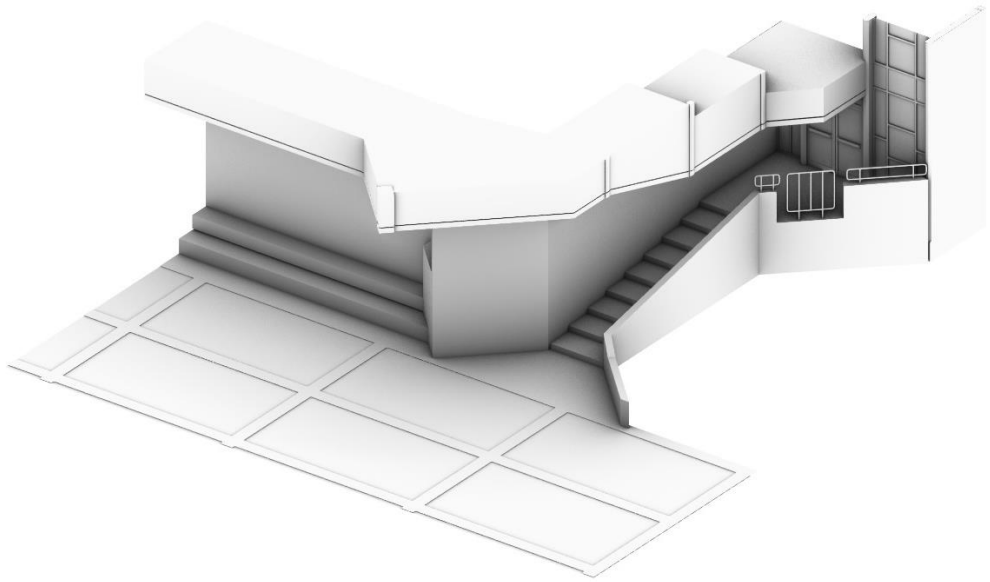


Figure 143. Electric and Electronics department D block entrance, 3D model by the author, 2022

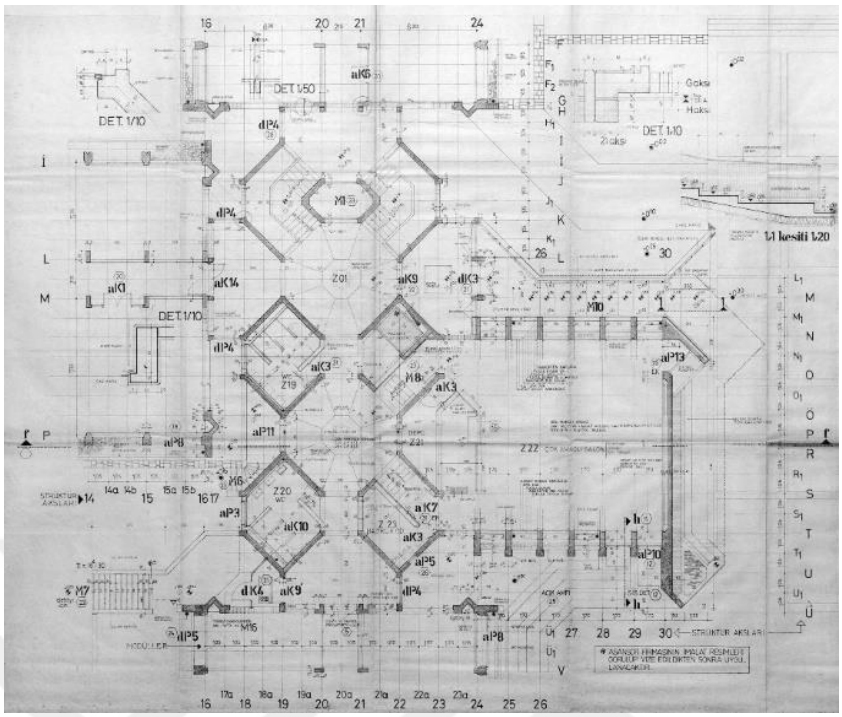


Figure 144. Electric and Electronics department D block entrance, drawings by A. and B. Çinici

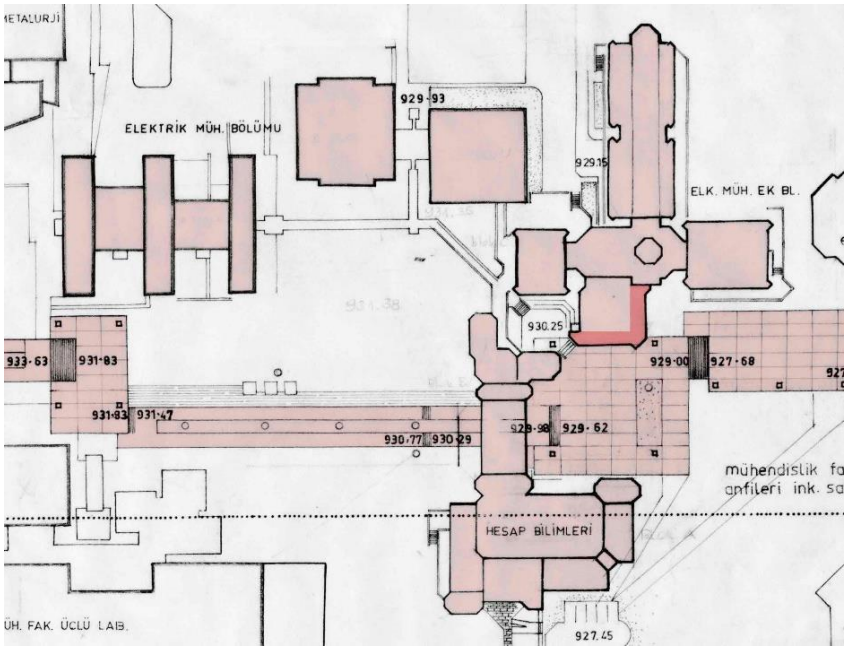


Figure 145. Electric and Electronics department from the masterplan

22. Electric and Electronics Department Auditorium and Pool



Figure 146. Electric and Electronics department auditorium and pool, photograph by the author

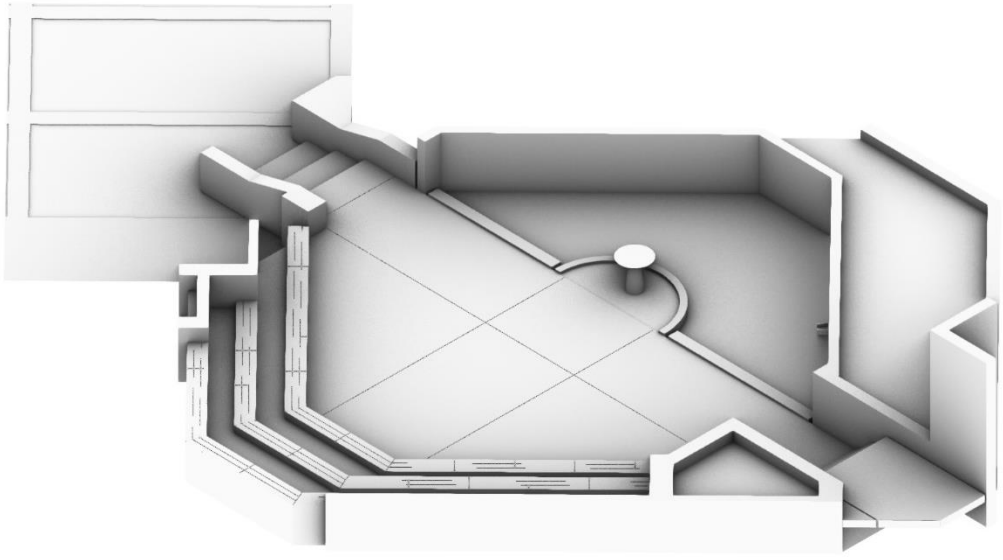


Figure 147. Electric and Electronics department auditorium and pool, 3D model by the author

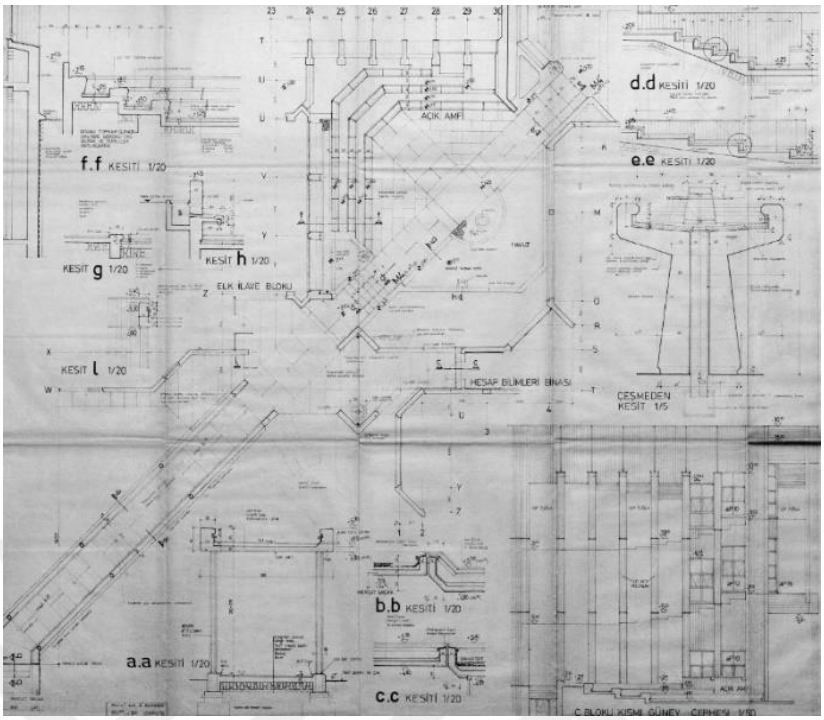


Figure 148. Electric and Electronics department auditorium and pool, drawings by A. and B. Çinici

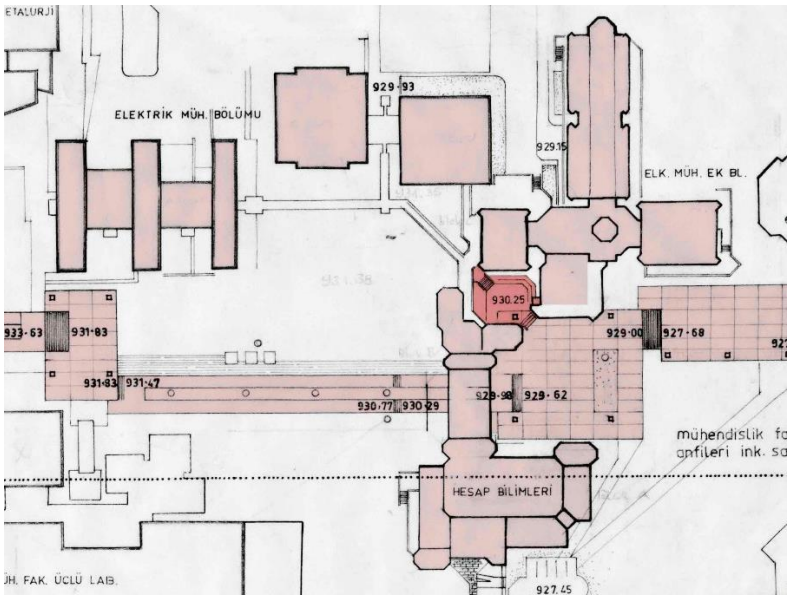


Figure 149. Electric and Electronics department from the masterplan

23. Electric and Electronics Department A Block Entrance Gate & Arcades



Figure 150. Electric and Electronics department A block entrance and arcades, photograph by the author, 2022

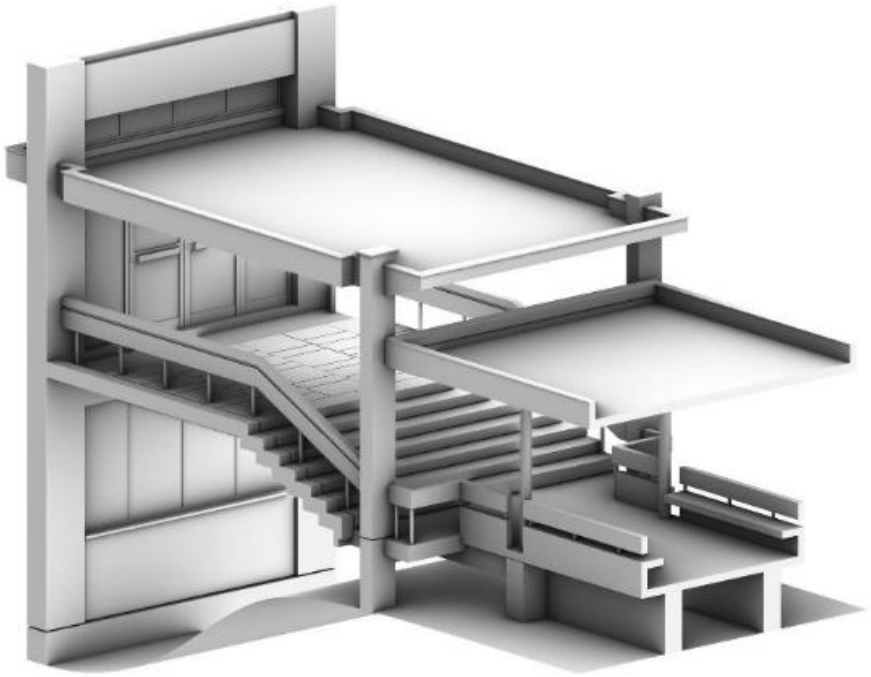


Figure 151. Electric and Electronics department A block entrance, 3D model by the author

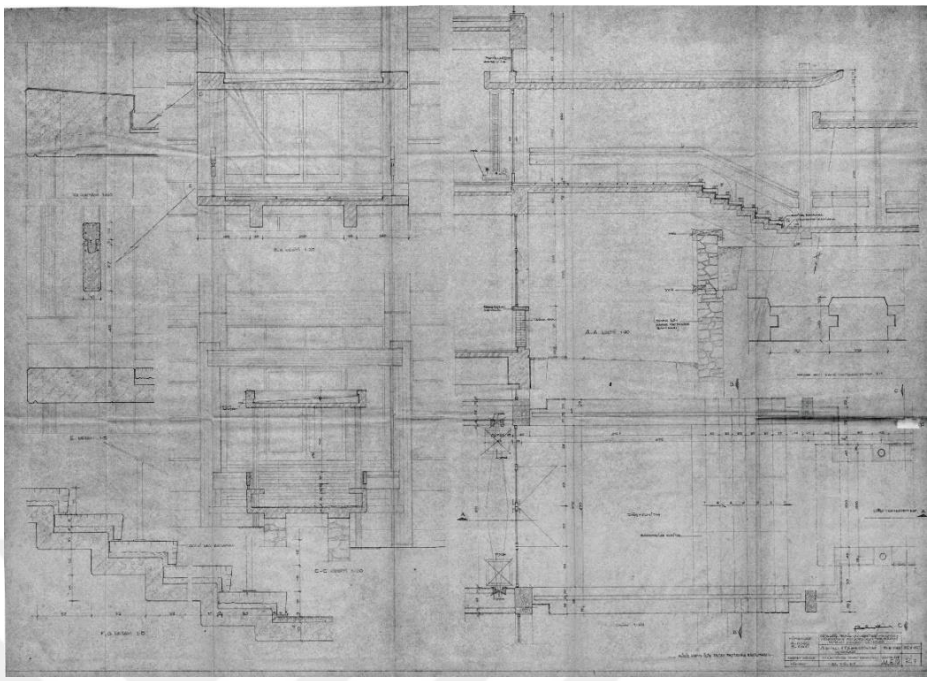


Figure 152. Electric and Electronics department A block entrance, drawings by A. and B. Çinici

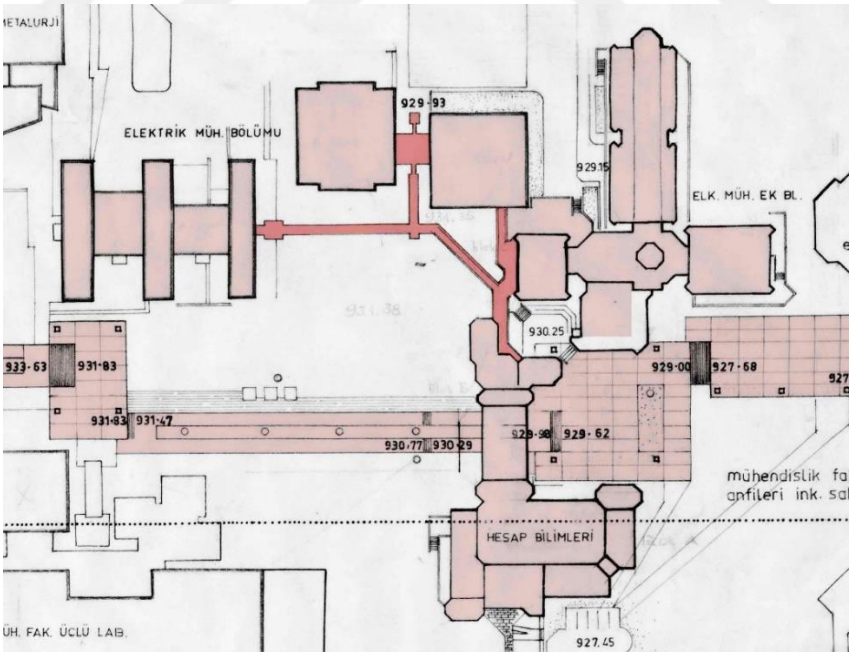


Figure 153. Electric and Electronics department from the masterplan

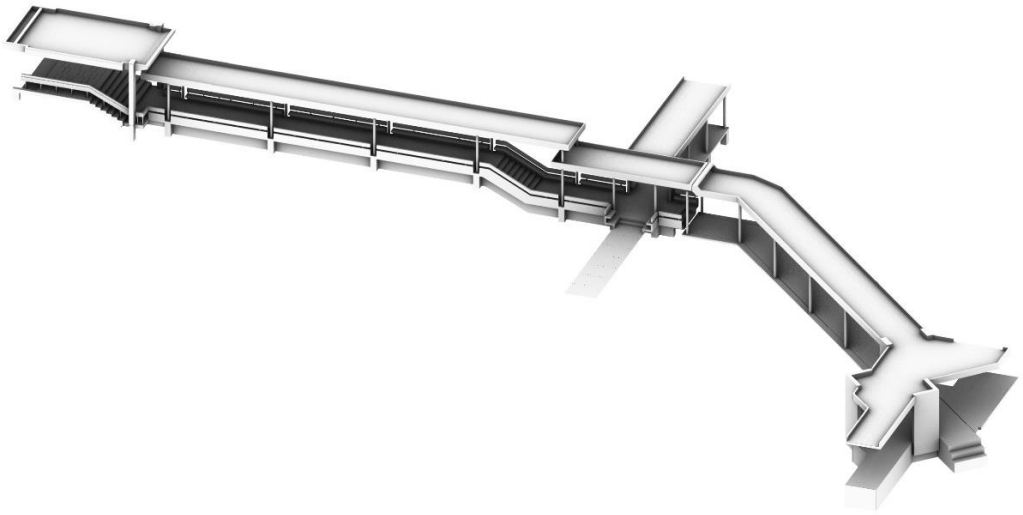


Figure 154. Electric and Electronics department arcades, 3D model by the author



Figure 155. Electric and Electronics department arcades, photograph by the author, 2022

24. Mechanical Engineering E Block Entrances



Figure 156. Mechanical Engineering E block entrance, photograph by the author, 2022



Figure 157. Mechanical Engineering 2nd E block entrance, photograph by the author, 2022

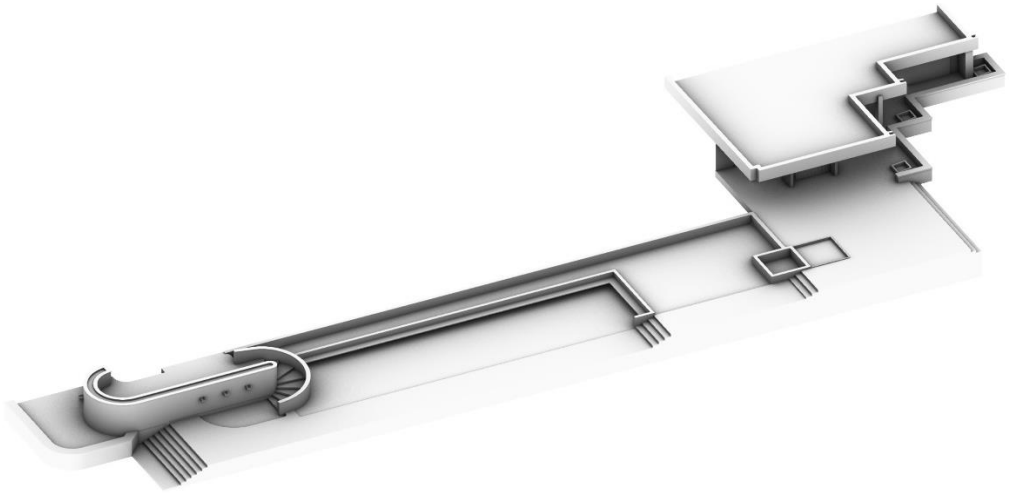


Figure 158. Mechanical Engineering E block entrances, 3D model by the author

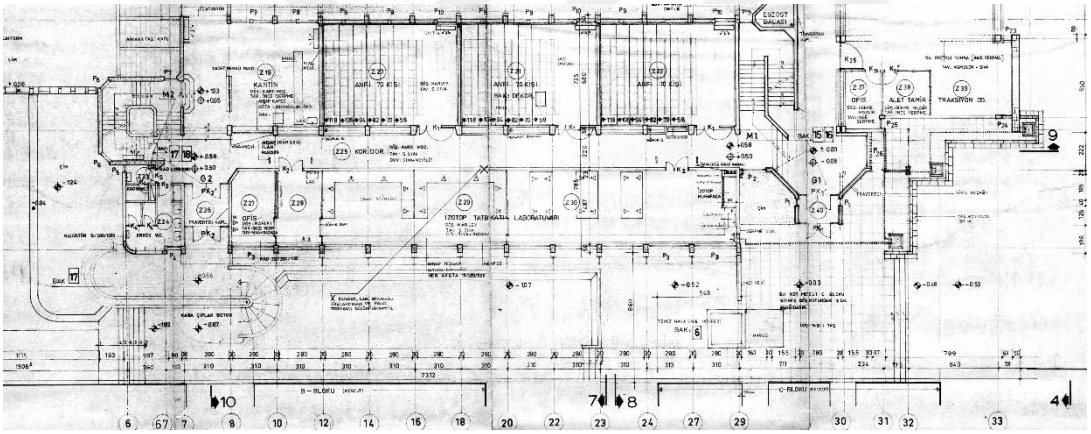


Figure 159. Mechanical Engineering E block entrances, drawings by A. and B. Çinici

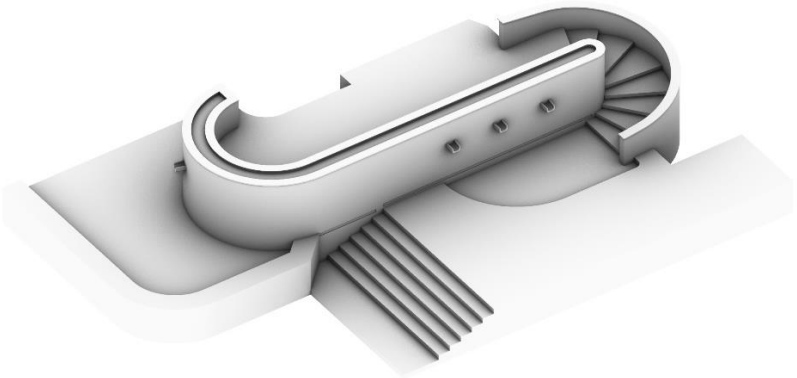


Figure 160. Mechanical Engineering E block first entrance, 3D model by the author

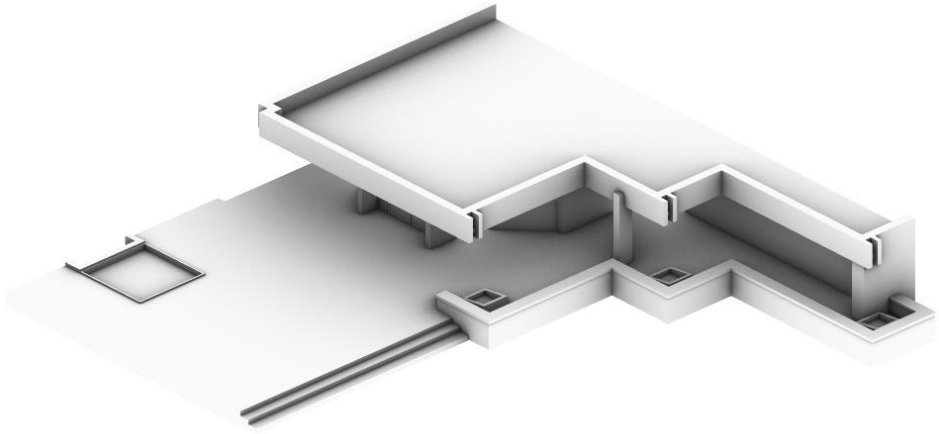


Figure 161. Mechanical Engineering E block second entrance, 3D model by the author

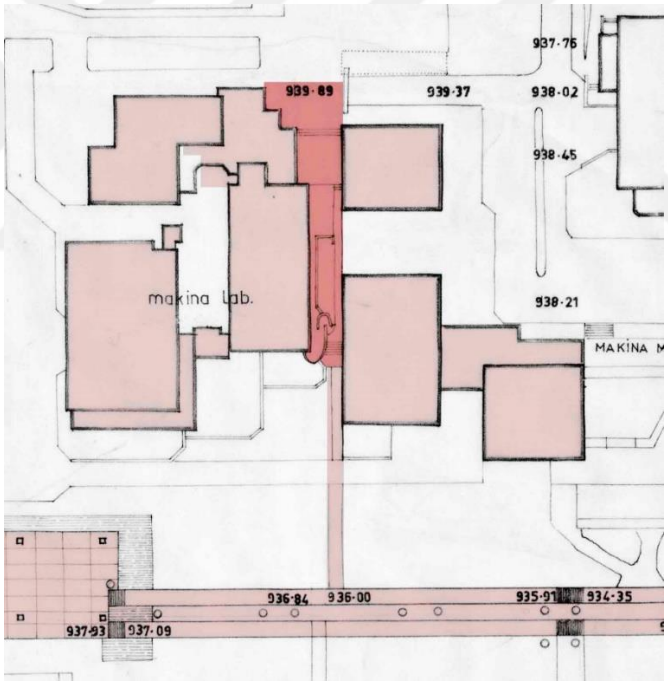


Figure 162. Mechanical Engineering E block entrance from the masterplan

25. Chemical Engineering D Block Back Entrance



Figure 163. Chemical Engineering D Block Back Entrance, photograph by the author, 2022

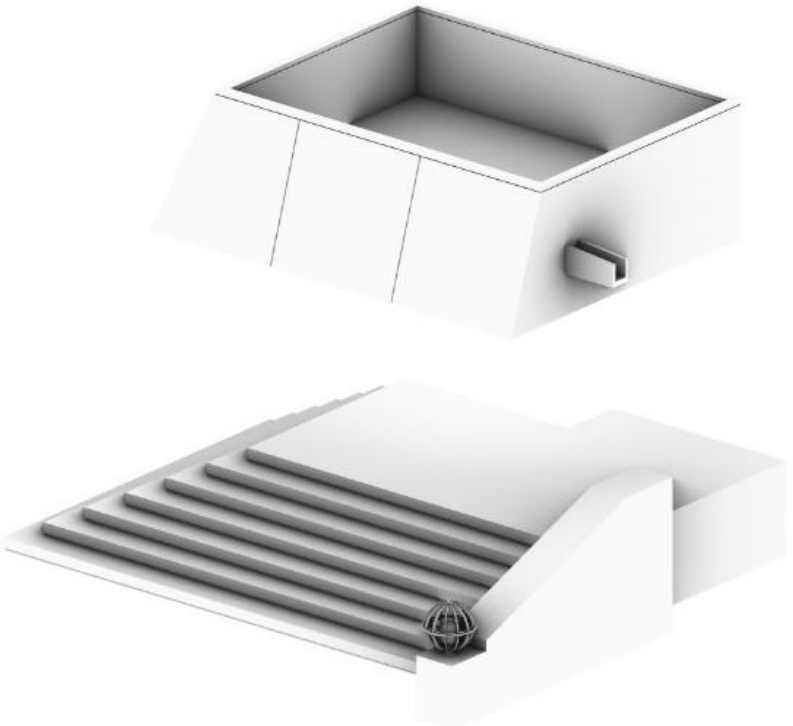


Figure 164. Chemical Engineering D Block Back Entrance, 3D model by the author

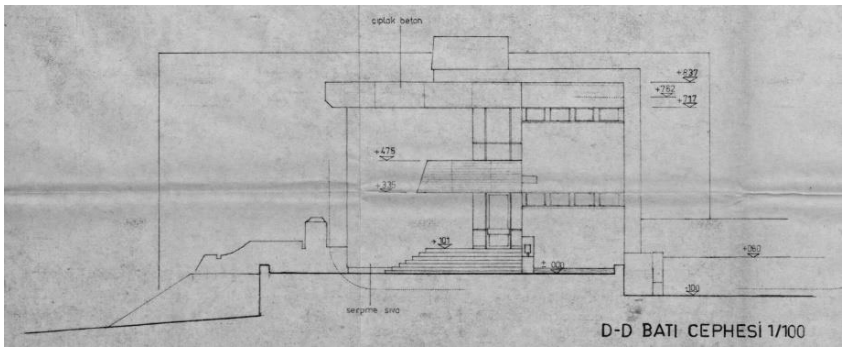


Figure 165. Chemical Engineering D Block Back Entrance, drawings by A. and B. Çinici

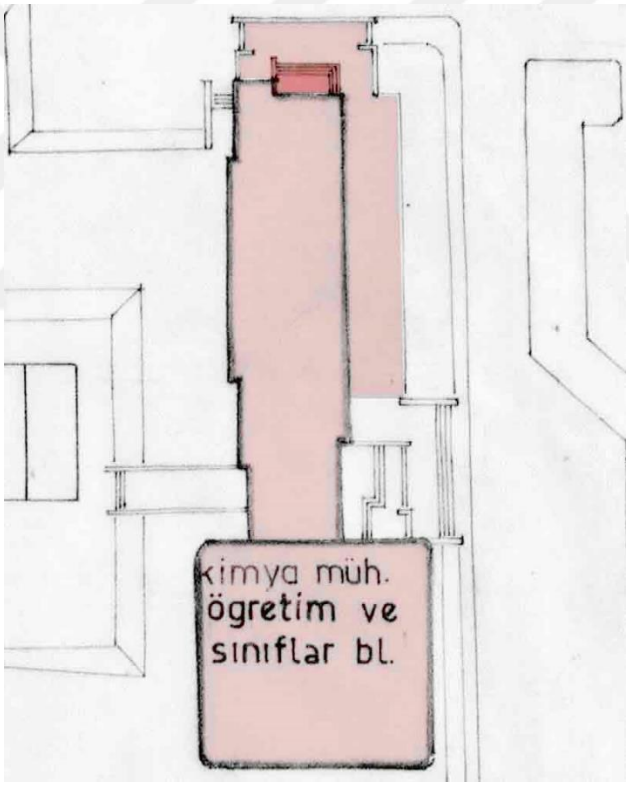


Figure 166. Chemical Engineering D Block Back Entrance from the masterplan

26. Chemical Engineering E Block Entrance



Figure 167. Chemical Engineering E block entrance, photographs by the author, 2022

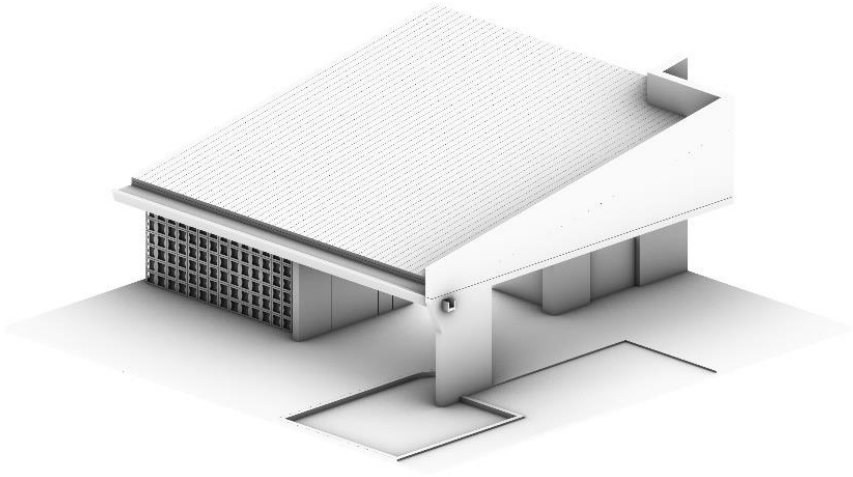


Figure 168. Chemical Engineering E block entrance, 3D model by the author

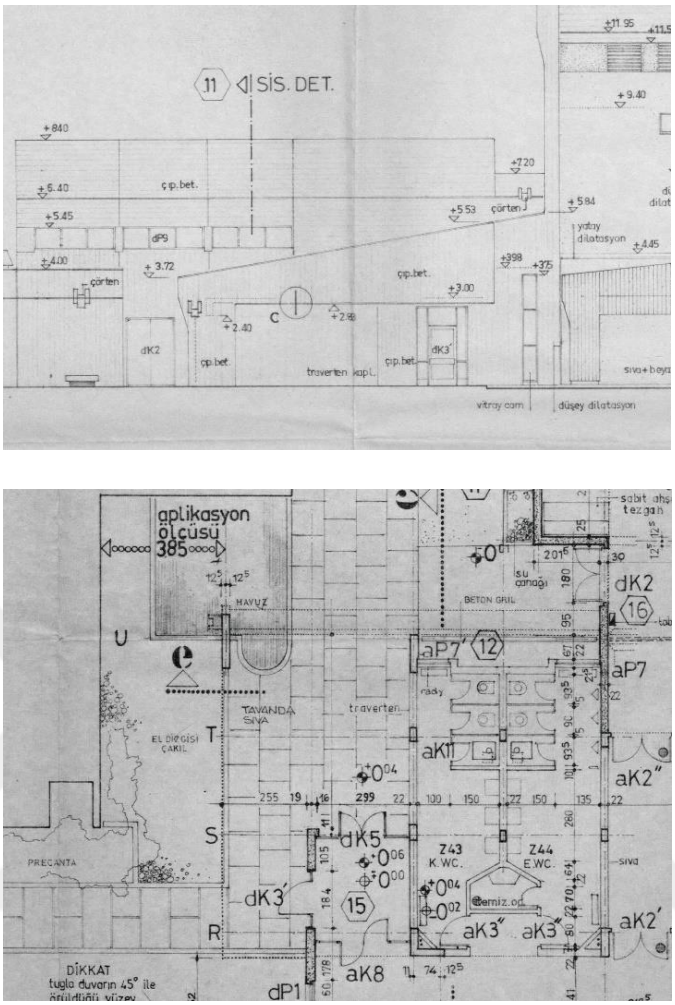


Figure 169. Chemical Engineering E block entrance, drawings by A. and B. Çinici

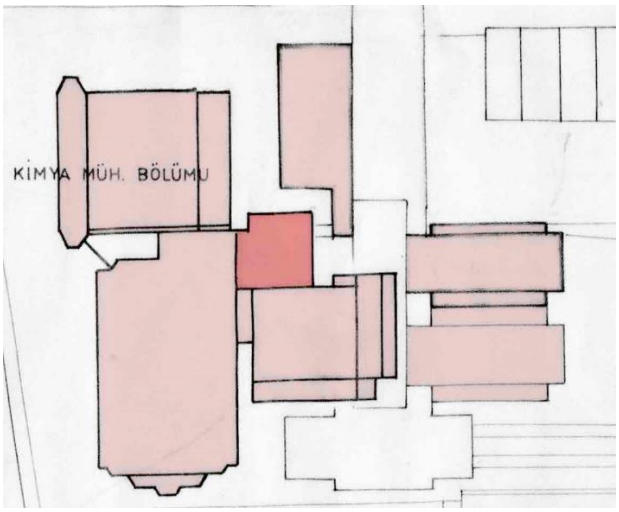


Figure 170. Chemical Engineering E block entrance from the masterplan

27. Environment and Civil Engineering Buildings Complex Stairs



Figure 171. Environment and Civil Engineering buildings complex stairs, photograph by the author, 2022

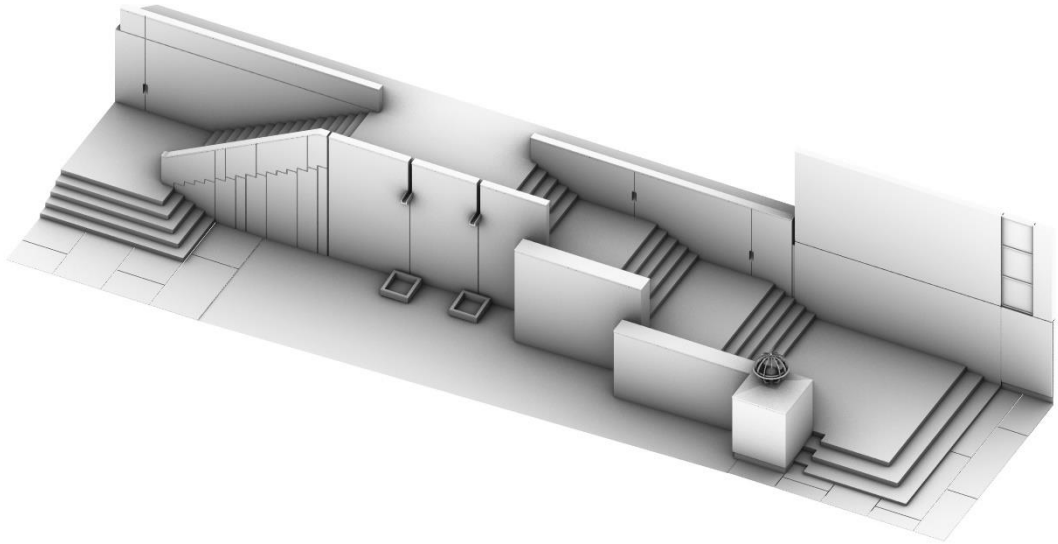


Figure 172. Environment and Civil Engineering buildings complex stairs, 3D model by the author

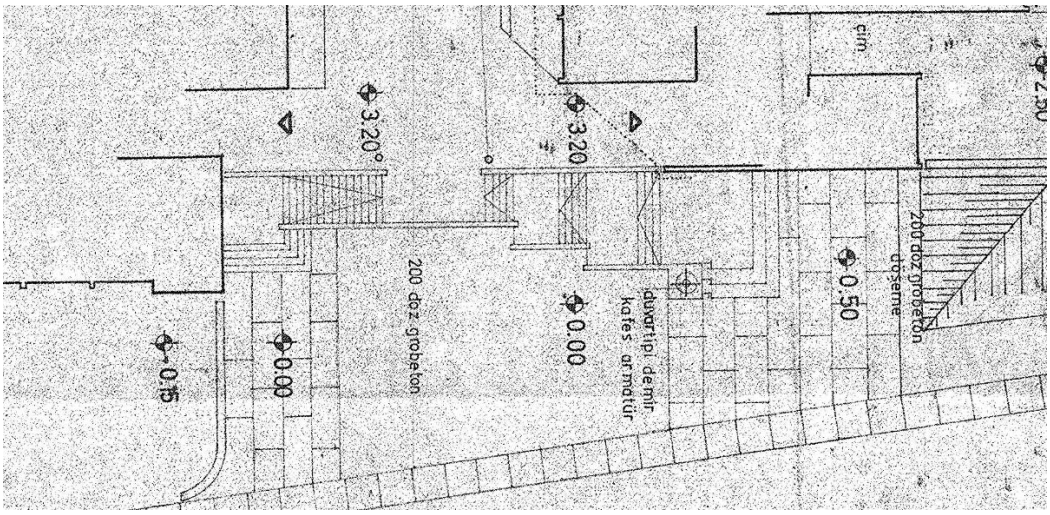


Figure 173. Environment and Civil Engineering buildings complex stairs, drawings by A. and B. Çinici

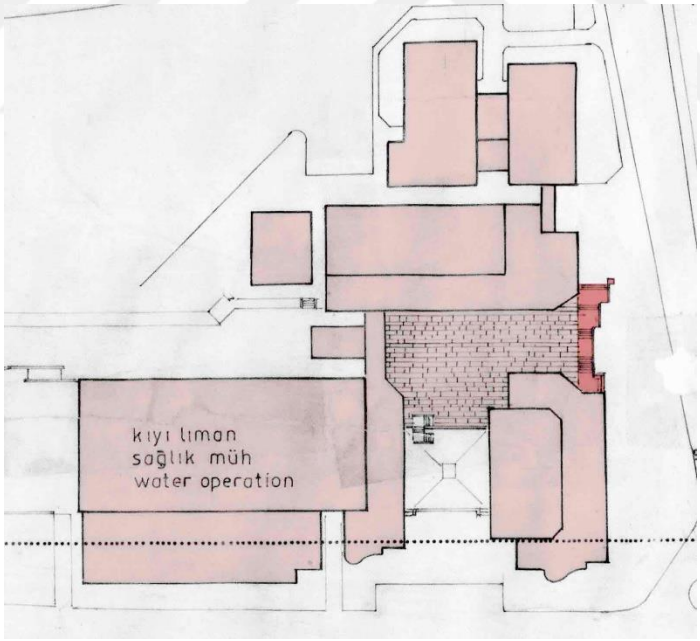


Figure 174. Environment and Civil Engineering buildings complex from the masterplan

28. Geology Engineering Entrances



Figure 175. Geology Engineering main entrance, photograph by the author, 2022

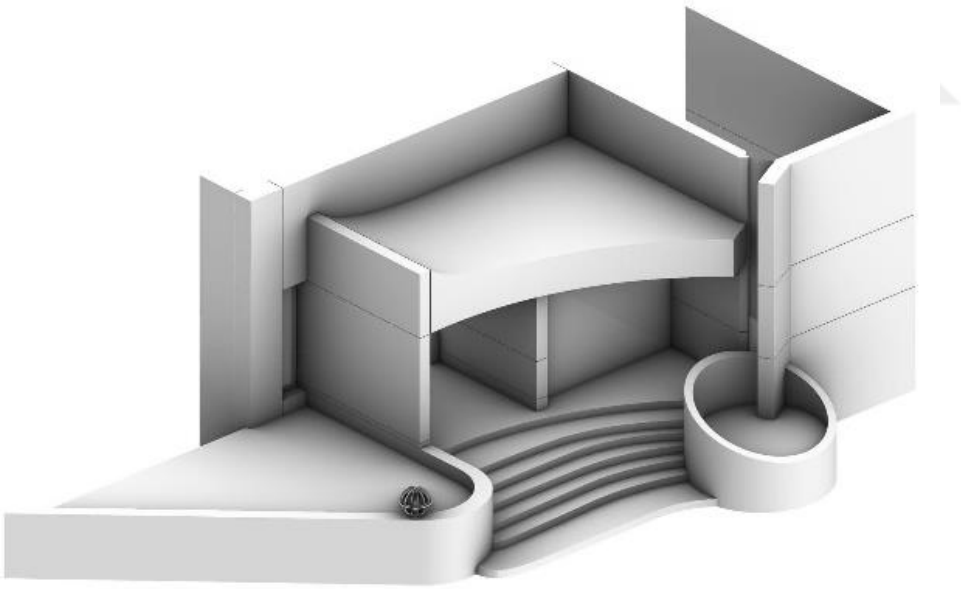


Figure 176. Geology Engineering main entrance, 3D model by the author

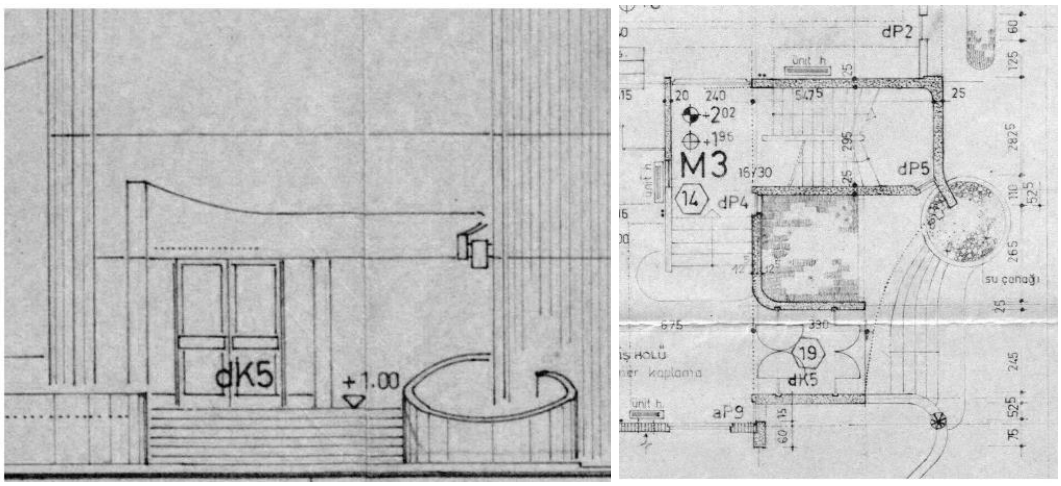


Figure 177. Geology Engineering main entrance, drawings by A. and B. Çinici



Figure 178. Geology Engineering back entrance, photograph by the author, 2022

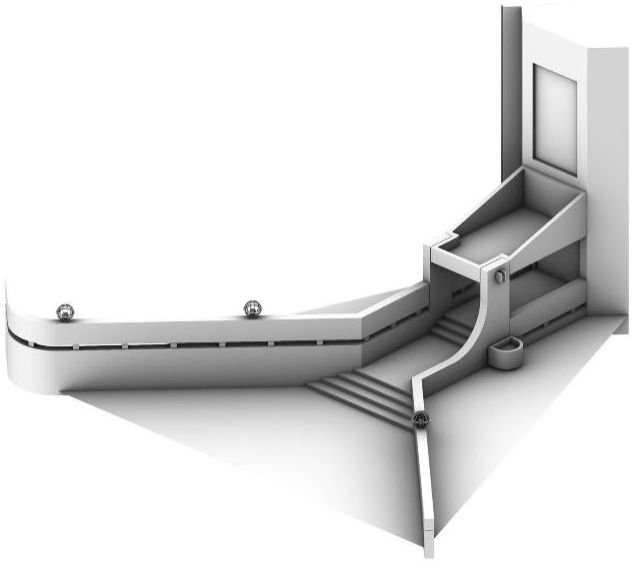


Figure 179. Geology Engineering back entrance, 3D model by the author

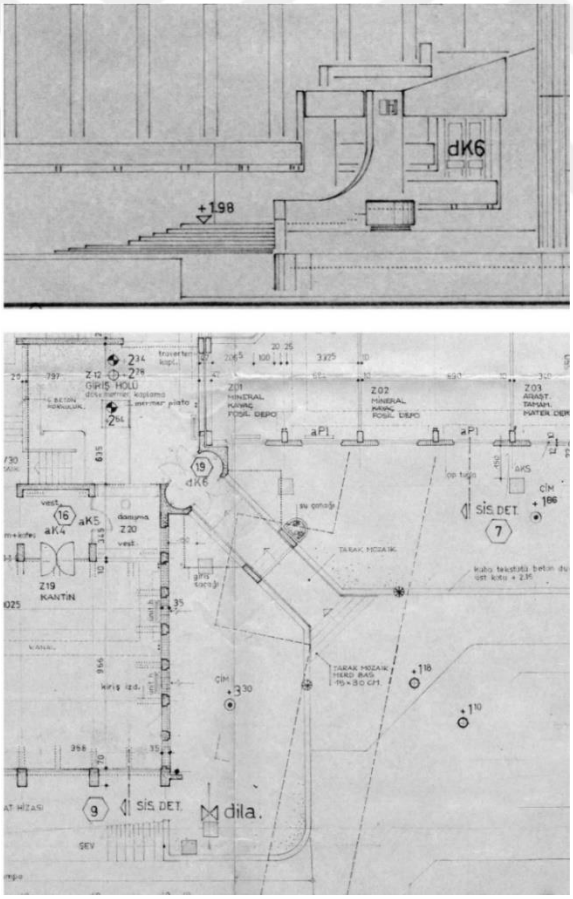


Figure 180. Geology Engineering back entrance, drawings by A. and B. Çinici

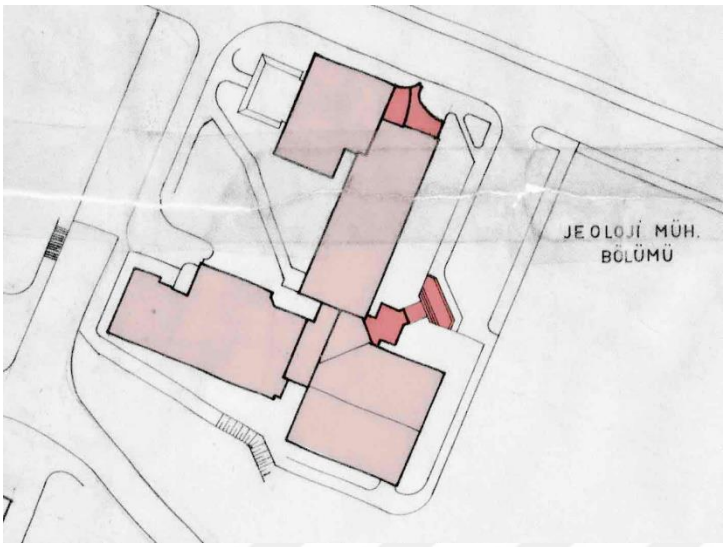


Figure 181. Geology Engineering from the masterplan

CHAPTER 4

CONCLUSIONS

This study starts with the claim that introducing the term "volume" "as opposed to mass" can make a different reading of the METU Campus possible, with different opportunities and approaches to cover this newly re-discovered topic. A big inspiration and discovery that initially urged this study to pursue this topic was the mention of the term "Volume" on two separate sources. The first one is an interview piece by Behruz Çinici, which was on how great of an effort was given to the volume aspect of the METU Campus.[48] The other discovery was from the 1932 book, "The International Style" by Philip Johnson and Henry Russell Hitchcock, which featured a chapter on the subject "volume", which is named "A First Principle: Architecture as Volume." [49]

"If identification of a mass relies on definite borders, there are no borders at the METU Campus" Strong interrelation of courtyards, raised entrance platforms, arcades, entrance gates and other landscape elements blur the boundaries. Volumes, as opposed to masses, do not rely on definitive borders, but rely on weak enclosures. Although volume implies a three-dimensional space, it does not require visual or material borders, but rather implications, which is done with an above-mentioned

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[48] The art of creating spaces between buildings is lost today. We see the building as a positive shape used volume. The 'outdoor' established by this volume with the other masses around is generally neglected. I wanted to do this in the forum (the alley). I saw a positive shape in these empty spaces and worked on it by using the tension in the volumes…

Retrived from Salt Araştrma archives:
https://archives.saltresearch.org/handle/123456789/133?locale=tr

[49]

series of sculptural, typologically consistent elements. These elements can be thought of to populate the alley and the space between faculty and administrative buildings, which allows the campus to be read the way it had in this study. These volume-defining elements shares a similar vocabulary of architectural parts. These can be the use of natural stone, lighting elements, *çörten* elements, balustrades, platforms, pools, sculptural columns, flooring tiles, joint gaps, eaves, and concrete flower tubs. Moreover, these smaller elements are usually expressed with small modifications and different arrangements that made these individual objects unique. This is one of the qualities that allows them to be perceived in a sculptural manner.[50] Use of these elements results in a typologically consistent series of integrated objects throughout the METU Campus.

Furthermore, this study claims that rather than presenting a singular representational model for representing the volume, which was attempted in the initial study within the courses of Arch505 and Arch 571, a systematic and detailed analysis on a smaller scale offers much more in terms of understanding the initial principles of the METU Campus. By developing a systematic representation and presentation style for the term "Volume", this study ultimately is a research by design with a consciousness of history. Therefore, thesis places great value on featuring newly made 3D models with original drawings and recently taken photographs.

Although this study did not achieve, and not aimed to achieve, what was initially envisioned in the initial research within the courses Arch 505 and Arch571, which is to create a comprehensive volumetric model for the METU Campus, it has succeeded in contributing to this subject by producing and curating a series of representations on key architectural elements that was noted during the initial research as volume defining elements. To conclude, the ultimate direction of these studies was to

[50] Rosalind Krauss, Sculpture in the Expanded Field, (The MIT Press, Vol. 8 Spring, 1979): 30-44.

contribute to the ongoing archival effort for the METU Campus[51] with the mottos "research by design" and "conservation by documentation"[52] which was aspired to be achieved by this representation project.

[51] Many peers are working on the documentation of the METU Campus such as Ege Doğan, Osman Batuhan Türker, Setenay Özsoy, Sara Rraja, Melike Yürekli, Ömer Faruk Ağırsoy, Serra İnan, Sezin Sarıca, Bengisu Derebaşı with Ayşen Savaş's supervision.

[52] Ayşen Savaş, İpek Gürsel Dino, Sezin Sarıca, Bengisu Derebaşı, Fatma Serra İnan, Şahin Akın (Ed.). "Research and Conservation Planning for The METU Faculty of Architecture Building Complex by Altuğ-Behruz Çinici Ankara, Turkey," 2018.

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