The LivenARCH+ Journal, the official publication of Karadeniz Technical University, Faculty of Architecture, Department of Architecture, is an academic, international, peer-reviewed, electronic open-access journal that is published in English.
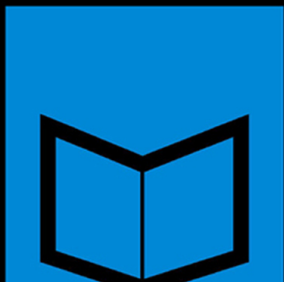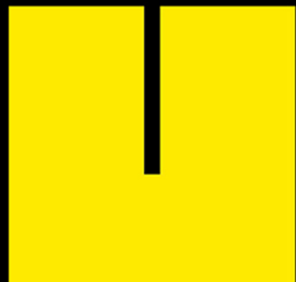
About

The LivenARCH+ Journal, the official publication of Karadeniz Technical University, Faculty of Architecture, Department of Architecture, is as an academic, international, peer-reviewed, electronic open access journal which is publishing in English.

The LivenARCH+ Journal, which will be published three times a year in January, July and as a Special Issue, includes theoretical and applied studies on current issues within the scope of design disciplines and research articles prepared on the basis of sciences related to the field of design.

In this context, it is expected that the articles to be included in the scope of LivenARCH+ Journal will be original and scientific research studies, whose contribution to the relevant literature has been proven by qualitative, quantitative, experimental and analytical methods.

We expect to see the valuable researchers and academicians in the LivenARCH+ Journal family and offer our respects.

Aim & Scope

Architecture exists on the dynamics of new theories, discourses, designs, methods, applications and productions, beyond its basic needs.

In this respect, the purpose of LivenARCH+ Journal is to provide an academic environment for reproducing and sharing thoughts, knowledge, practices, achievements and experiences among all the actions and actors of international and national platforms where the discipline of architecture is in contact with the subject of "LIVable ENvironments and ARCHitecture".

LivenARCH+ Journal aims to open various approaches from all scales and different cultures to academic circulation in a common field of literature, to produce new architectural information aimed at the vision of the future of architecture. In the light of this aim, it is expected that the actions of the profession and the information produced by its actors will be related to the main theme of "LIVable ENvironments and ARCHitecture" and its potential sub-themes.

Under the context of the main theme and scope of "LIVable ENvironments and ARCHitecture", the sub-themes that create and develop architecture in all its dimensions have been identified as; "philosophy/history/theory/discourse", "criticism/method", "nature/environment", "human/behavior/public health", "politics/policies/laws/regulations/ethics", "economy", "identity/culture/tradition", "urban/city/landscape/rural", "technology/material/sustainability", "conservation/transformation/re-use", "design/interior design", "arts/aesthetics" and "education" and have been opened to the researchers' scientific sharing.

Publishing Policy

LivenARCH+ Journal is an international peer-reviewed electronic journal published twice a year, with an additional Special Issue, by the Department of Architecture, Faculty of Architecture, Karadeniz Technical University.

LivenARCH+ Journal utilizes the TUBITAK ULAKBIM DergiPark interface.

The copyright of articles accepted for publication in LivenARCH+ Journal is considered transferred to the journal. Authors of LivenARCH+ Journal articles transfer their publication rights and all related privileges to LivenARCH+ Journal by filling out the "LivenARCH+ Journal COPYRIGHT TRANSFER FORM" available in the journal system.

Publication Ethics

Manuscripts that do not comply with the "LivenARCH+ Journal ETHICAL PRINCIPLES AND PUB-LISHING POLICY" will not be considered for the peer review process.

Manuscripts submitted to LivenARCH+ Journal for publication are evaluated by national and/or international referees. The final decision about the manuscript is made by the editor(s).

The double-blind peer review system is applied in LivenARCH+ Journal.

In the same issue of LivenARCH+ Journal, more than one article with the same author's name as the sole and/or corresponding author cannot be published.

Authors of manuscripts submitted to LivenARCH+ Journal send the similarity report to the journal simultaneously with the manuscript. In the iThenticate/Turnitin programs where the similarity check will be performed, a similarity rate (excluding sources) of up to 15% is expected.

For manuscripts submitted to LivenARCH+ Journal requiring Ethics Committee Approval/Legal Permission/Special Permission, the author(s) submit the official document related to the permission containing the necessary explanations to the journal simultaneously with the manuscript.

There is no submission, editing, evaluation, and publishing fee in LivenARCH+ Journal.

Editor(s) Ethical Responsibilities

Editors are responsible for ensuring that every article published in LivenARCH+ Journal is published in accordance with the "LivenARCH+ Journal ETHICAL PRINCIPLES AND PUBLISHING POLICY" and international standards.

Editors are obligated to implement the policies outlined in the "LivenARCH+ Journal ETHICAL PRINCIPLES AND PUBLISHING POLICY", specifically the "BLIND PEER REVIEW AND EVALUATION PROCESS"; they ensure that each article is fairly, impartially, and timely reviewed, regardless of the author's ethnic origin, gender, sexual orientation, nationality, religious beliefs, or political philosophy.

During the submission stage to LivenARCH+ Journal, authors are required to declare any conflicts of interest. If no such declaration is provided, a note stating that no conflict of interest has been declared is added to the article during the typesetting stage.

Editors of LivenARCH+ Journal have the right to reject an article in the event of the detection of any conflict of interest.

Editors review articles submitted to LivenARCH+ Journal for compliance with the aims/scope and writing rules principles and ensure their entry into the peer review process.

Editors have full authority in the assignment of referees, and the final decision regarding articles to be published in LivenARCH+ Journal lies with the editors. Editors consult the Scientific Advisory Board when necessary for the final decision.

Articles sent to referees by editors are expected to be evaluated within twenty (20) days. If this period is exceeded, editors make a new referee assignment, retracting the request from the previous referee.

All changes requested by the editorial team or referees must be made by the authors within twenty (20) days. Articles not corrected by the authors within this period are considered withdrawn.

Corrected articles are re-evaluated by referees requesting changes or corrections, if necessary.

LivenARCH+ Journal editors decide on the publication of articles where corrections and suggestions requested by referees are made, in line with the opinions of the referees.

Referee(s) Ethical Responsibilities

Manuscripts received by LivenARCH+ Journal referees are evaluated anonymously. The double-blind peer review principle, where referees do not know the authors, is applied during the evaluation process, and each manuscript is sent to two (2) referees. For a manuscript to be published in the journal, two (2) positive reports from referees are required. In cases where referee reports differ, the opinion of a third referee is sought, and the evaluation is completed.

Direct communication between referees and authors is not allowed within the scope of LivenARCH+ Journal. Article evaluations and notes are communicated to authors by the editors.

Referees keep their evaluations confidential due to the nature of the documents sent to LivenARCH+ Journal.

Referees evaluate only the articles related to their areas of expertise. In case of a different subject, they inform the editor and withdraw from the process.

Referees report any conflicts of interest to the editor and withdraw from the process in case of issues related to conflicts of interest.

Referees complete the "LivenARCH+ Journal REFEREE EVALUATION FORM" for each article they evaluate, indicating their positive/negative decisions and reasons on the form.

The time assigned to referees to evaluate articles is twenty (20) days from the date of their assignment by the editor.

Referees inform the editors if they cannot evaluate the assigned articles within the designated time.

Referees notify the editors in case of any plagiarism and/or copyright infringement.

The language used in referees' reports should adhere to the rules of grammar, be academically articulate, explanatory, and constructive.

Referees acknowledge that the final decision regarding the publication of the article lies with the journal editors.

Author(s) Ethical Responsibilities

The opinions expressed in articles published in LivenARCH+ Journal are not the views of the journal. The entire responsibility for the articles belongs to the respective authors.

Authors of articles published in LivenARCH+ Journal are responsible for protecting the individual data of referees and readers.

Manuscripts submitted to LivenARCH+ Journal must not have been published elsewhere or submitted to any other journal for publication. The authors of the respective articles are responsible for any disputes arising in this regard.

Manuscripts submitted to LivenARCH+ Journal must be prepared in accordance with the "LivenARCH+ Journal WRITING RULES and FORMAT". Articles that do not comply with the "LivenARCH+ Journal WRITING RULES and FORMAT" are not considered for the evaluation process.

Manuscripts submitted to LivenARCH+ Journal must be original, and if they benefit from other works, proper citation or quotation is required.

The bibliography should be stated in a complete format.

Data containing copyrights are used with the necessary permission, and permission information is provided.

In articles based on postgraduate theses, information about the institution where the thesis was conducted and the thesis advisor is included.

Multiple publications made within the scope of a project are specified, and the first publication information is provided.

Research requiring ethical committee approval obtains approval, and approval information is included.

A "responsible author" is selected from the authors of the article. During the evaluation process, all communication with editors and the journal is the responsibility of the corresponding author. The corresponding author is obligated to provide timely, complete, and accurate information in response to all questions and requests from editors and referees.

All authors must sign the "LivenARCH+ Journal COPYRIGHT TRANSFER FORM" to specify the authorship order.

Volume 1. Issue 1.

Content

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* in order to the date of acceptance.

FROM A LIVABLE ENVIRONMENT TO THE LivenARCH+ JOURNAL

Asu BEŞGEN 📷

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From A Livable Environment

On September 19, 1963, the Department of Architecture was established at Karadeniz Technical University.

On June 4, 2001, the Department of Architecture organized its inaugural international congress, named LivenARCH (LIVable ENvironments and ARCHitecture) Congress.

As of January 29, 2024, the Department of Architecture has launched its first international journal, titled LivenARCH (LIVable ENvironments and ARCHitecture)+ JOURNAL.

Beyond the department's contributions and within the LivenARCH theme, the Department of Architecture at Karadeniz Technical University represents a livable environment. While attempting to be encapsulated within three sentences, it is a living environment so deeply rooted that it defies confinement to mere sentences.

All the academic and administrative staff who have accompanied and supported this long history deserve a great deal of gratitude.

To The LivenARCH+ Journal

The realm of architecture plays a crucial role in adapting to the swiftly evolving dynamics of daily life, particularly in response to unpredictable changes in social, cultural, economic, environmental, and technological cases. It not only addresses its fundamental needs but also thrives on the exploration of new theories, discussions, designs, methods, applications, and creations that surpass the basics. In this context, the LivenARCH+ Journal aims to establish an academic platform for generating and disseminating thoughts, knowledge, practices, achievements, and experiences within both global and local contexts where the discipline of architecture intersects with the theme of "LIVable ENvironments and ARCHitecture".

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The primary objective of LivenARCH+ Journal is to bring diverse perspectives from various scales and cultures into academic discourse within a shared literary domain. The aim is to generate novel architectural insights geared towards shaping the future vision of architecture. With this purpose in mind, it is anticipated that professional endeavors and the information generated by those involved will be aligned with the overarching theme of "LIVable ENvironments and ARCHitecture", along with its potential sub-themes.

In this context, this first issue of LivenARCH+ Journal presents a diverse selection of articles that not only remind us of the breadth of architecture beyond mere structures but also emphasize the necessity for architects to continually reassess their assumptions and adapt to evolving conditions and requirements. These alternative perspectives not only empower us to think and work with uncertainties but also demonstrate ways to adapt theories and practices that can go beyond dialectical oppositions, embracing possibilities for more nuanced, responsive, and ethical viewpoints and design processes.

In this first issue of LivenARCH+ Journal, a compilation is presented, comprising one discussion and six research articles that offer fresh insights across a broad spectrum of architectural discourse. These contributions cover various topics, ranging from spatial organization to the complexity of public space, from building information modelling to the socio-spatial transformation. Despite their apparent diversity, these articles coalesce around common themes that underscore the significance of interdisciplinary approaches and the critical reassessment of entrenched paradigms within architectural scholarship.

Şengül ÖYMEN GÜR discusses the place of "environment-behavior" issue based on a strong architectural theory titled as; *"Architecture As Spatial Organization"*, updating her theoretical framework with insights from Maurice Merleau-Ponty, Christian Norberg-Schulz and Juhani Pallasmaa. Drawing examples from figures like Zaha Hadid and Ignasi de Solà-Morales, she delves into the historical development of the "environment-behavior" process in an instructive and questioning manner, making transitions and comparisons over time. Adhering to the idea that architectural theory is a processual reality with an unchanging essence of firmitatis, utilitatis, venustatis, and denotatis, she presents the organizational concepts of space as standard semantic codes of behavior and space.

Semin ERDEM and Fatih TERZİ's research highlights an *"Assessing Public Space Complexity"* over *"A Comparative Study of Waterfront Areas in İstanbul's Bosphorus District"*. They aim to evaluate the two waterfront side of Istanbul based on Carmona's classification, based on land use data from the analysis by using Geographic Information System (GIS), and put forward the land property, multi-layered historical characteristics, non-comprehensive planning decisions, and transportation necessities lead to complexity in public spaces, which influence the nature and accessibility of public spaces, thereby contributing to the observed diversity along the waterfront. Their findings may also have implications for urban planning and the development of inclusive public spaces in coastal areas, so that the further works can improve public spaces classification on basis connectivity and continuity between public spaces on waterfront for urban design and planning strategies.

Erkan AYDINTAN, Selen Rumeysa ÜNLÜ, Merve TÜRKKÖYLÜ and Seda YAZICI lead us to the intersection point of an architect and an artist in their research titled; *"A Monograph on Space: Kahn Architecture and Turrell Installation".* They initiate a discussion, arguing that while the architecture creates space, the installation art presents spatial narratives. From this point of view, they put forward a hypothesis that the multidimensionality of space can be read through the architecture of Louis Kahn and the installation of James Turrell, and a monographic examination is carried out through their own discourses and publications on the works of these two influential figures.

In the context of Veli Mustafa YÖNDER and Hasan Burak ÇAVKA's research; *"A Case Study of Clash Detection for Early Design Phases in Building Information Modelling",* an examination of the available literature is conducted utilizing bibliometric approaches to gain insight into the theoretical underpinnings of clash detection. The modeling of the architectural design and structural project design for a two-storey Architecture Student Center (ASC) project, spanning roughly 1200 square meters, is undertaken. The clashes, both soft and hard, are categorized and examined based on the achieved outcomes.

With their research on the *"Interpreting Collingwood's Artistic Approach through the Design Philosophies of Arata Isozaki, James Corner and Karim Rashid"*, Kübra İlkiz KURT, Erkan AYDINTAN and Aslı İNCİ posit a hypothesis that the essence of art can be understood through the perspectives of influential figures in architecture, planning, and design. Beginning with an analysis of Collingwood's "The Principles of Art", the research focuses on architectural, interior design, landscape architecture, urban planning, and industrial product design, over the figures such as; Arata Isozaki, James Corner, and Karim Rashid. The research concludes that design approaches in different disciplines draw from various dimensions of art, contributing to significant richness within the design discourse.

In their research; *"Spaces in Flux: Documenting Migration, Belonging, and Socio-Spatial Transformation in Basma[Ha]Ne, İzmir",* Perin ÇÜN and Leman ÖZGÜR recognize an urban space shaped by a multifaceted history of migration, where each migrant's experience contributes to interconnected socio-spatial, socio-cultural, and socio-economic layers, prompting the need for novel spatial interpretations. They acknowledge migration as a transformative socio-spatial force, and seek to explore how migrants contribute to the spatial fabric in regenerating a sense of home in the area. Their research draws on field research that involves semi-structured interviews conducted with relevant actors in the area; Basma[Ha]Ne, İzmir.

Pelin DURMUŞ HOCAOĞLU put forwards a different point of view from the origin of architectural education. In her research; *""SCAMPER" as a Supportive Model for Transferring Design Studio Learning Outcomes"*, she addresses a supportive teaching model, aiming to enhance learners understanding and ability to generate diverse solutions to contemporary problems. This is achieved by actively utilizing and experiencing the learning outcomes acquired through traditional teaching models. The research focuses on the sustainability of learning outcomes in architectural design studios and the potential of the "SCAMPER" applications to improve the design process.

As a whole, these explorations and inquiries illustrate that theory and practice do not exist as the previously assumed dichotomy defining the discipline. Instead, they show that architectural processes engage in a necessary adaptation, intertwining ways of thinking and doing. Thus, the researches presented in the first issue of LivenARCH+ Journal demonstrate the potential of architecture to reclaim its role as the dynamic foundation through which our collective environments and interconnected ecologies can be comprehended, expressed, altered, and shared.

On behalf of the Editorial Board, I extend my invitation to esteemed researchers and academicians to contribute to the LivenARCH+ Journal family for our second issue, scheduled for publication in July 2024.

I express my utmost respect and look forward to your valuable contributions.

Discussion

ARCHITECTURE AS SPATIAL ORGANIZATION

Şengül ÖYMEN GÜR iD

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In the resurrection of LIVENARCH, my esteemed colleague,
the late Prof. Dr. Şinasi Aydemir, and I joined forces.

The fact that the two of us had solid individual sides that were very different
simultaneously added strength to our strength.
He was a constructive person; I am sure he rested in the lights.

I dedicate this article to him!

Introduction

My book Spatial Organization (Gür, 1996), which I wrote long ago, became my most cited book on the Scholar site, where thesis and dissertation citations were not even recorded. Academics in my country needed my expertise in Environmental-Behavioral issues. I am happy to contribute significantly to society and the relevant sector. Here, I would like to update this topic.

I want to discuss the subject by mentioning its place in general architectural theory. First, I must emphasize that there is a theory of architecture. A discipline without a theory is not a discipline (Foucault, 1969). Theory in architecture is an organic, evolutionary discourse that describes practice and production, identifies the difficulties therein, and has a holistic structure determined by them. These feedbacks between architectural theory and practice form the basis of the discipline's development. The essence of architecture, which consists of structure, function, aesthetics, and meaning, is fed by interpretations such as model, type, order, form, form and style-attitude that it accumulates or creates in the face of various building needs and, of course, building and material technologies (Figure 1). These are indicated on the positive X-axis of my abstract diagram below. The main external influences, as indicated at the minus end of the X-axis, are usually social and economic structures, which are the mainstay of architectural power. Cultural and ethnic determinants indicate that different architectural conceptions may emerge in different geographies.

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As for the Y-axis, history testifies that architecture has always oscillated between reason and emotion: Rational periods are followed by emotionality, and emotional periods are followed by rationality; for instance, Postmodern Architecture follows Modern Architecture. Some tendencies in the postmodern era gave great weight to anachronistic-metaphorical interpretations; the diachronic-metaphoric movement almost parallel to it, approached the time faithfully, questioned various aspects of Modern Architecture and led to accelerated developments in fiction, technology, and communication. It should be noted here at the outset that architectural ethics is said to be closely linked to Venustas (aesthetics) and is a crucial component within Firmistas (solidity). Alberto Pérez-Gómez considers the two to be almost identical (Pérez-Gómez, 2006). According to him, if architectural fiction is aesthetic, it is ethical; if it is ethical, it is aesthetic... I am afraid I have to disagree. An aesthetic order does not always have to be ethical. It is possible to resort to some illusions to achieve functional and aesthetic results in architecture and interior architecture. For example, creating different effects by lighting different ways in a niche in a museum is permissible in architecture and interior design. For that matter and others, I preferred the Gurian Quartet to the mega concepts of the Vitruvian Triad (robustness, functionality, beauty): robustness, functionality, beauty, and *expressiveness* (Figure 1). The purpose here is to emphasize that there is no architecture without meaning!

The meaning of a space can be based on ontological, epistemological, or pragmatic. Or all of them... Thankfully, a scholar named Pierce proposed a pragmatic value of icons that also implies the meaning of an object (1982).
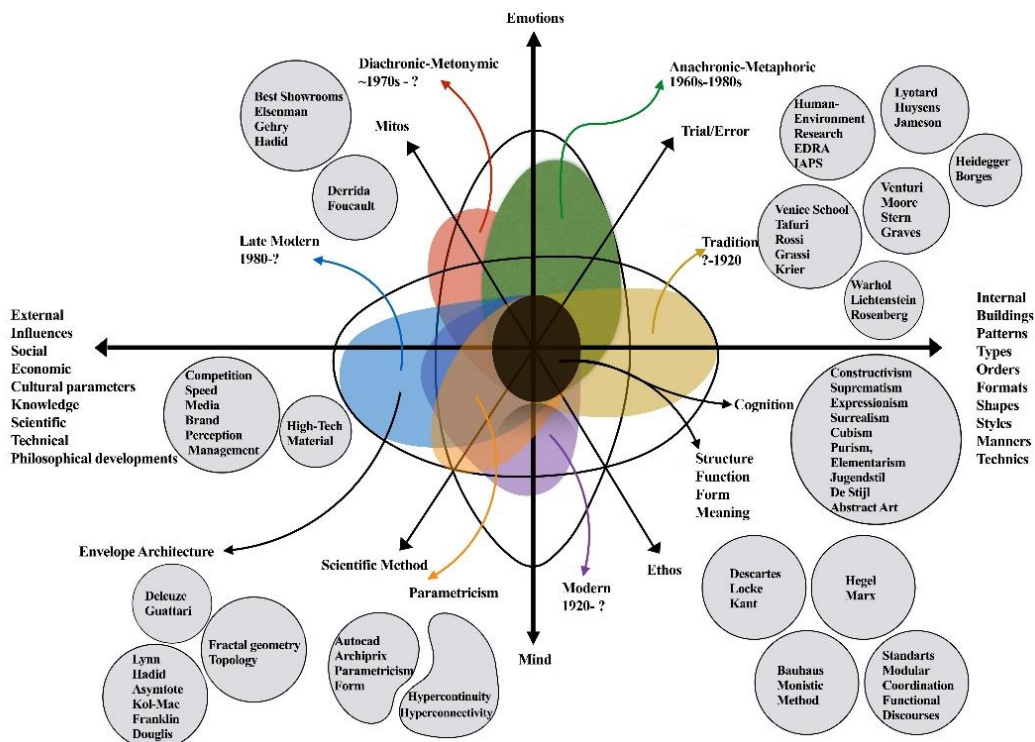
Figure 1. Architectural theory is a processual reality; its unchanging essence is firmitatis, utilitatis, venustatis, and denotatis (structure, function, form, meaning).

For human beings, the changing organization of space is much more critical than the diversifying aesthetics of architectural styles. Because one is only visual and maybe tactile, and the other is vital. Modern Architecture has overflowed the clichés of the past, showing all subsequent designers original and creative ways of designing and paving the way for relentless innovation. Constructing all kinds of spaces with any architectural design approach seems possible today. Digital paradigms have partially replaced the representation paradigms of Modern Architecture, and that is it. The only obstacle to limitlessness is concern for our planet and humanity. Naturally, these are severe issues. However, design tools are now so diverse and full of possibilities that... If we did not have that chance, there would be an essential problem for those who deal with these universal concerns. However, at the most critical point in this process, Foucault warns us again (Foucault, 1991): The concept of governmentality he describes means "the management of attitudes and behavior" or "the art of dominating," which includes a wide variety of control techniques that make subjects manageable. Reflecting on architecture, it is necessary to approach technologies originating from the Global North, the possible consequences of which we cannot foresee, with common sense. Otherwise, sustainable solutions may be too expensive because of their techniques and materials; they can enslave! (Gür, 2024).

A Look Back at the Organization of Space

It has been almost 30 years since I wrote about the organization of space (1996). Since then, several important new concepts have emerged in architectural organization. One of them is the critical discourse of Maurice Merleau-Ponty (1945), who most radically concerns architectural education and practice: "We perceive, recognize, know individuals, communities, and places with our brains and bodies." This discourse shifted architectural attention from our knowledge and ability to move and see to our bodily experiences and mental accumulations. The intellectual scope of architectural design has expanded, and the memories and experiences of the people served in the design of the environment, city, and architecture in the recent period have gained importance. Some architects considered some of these paradigms valuable and respected as design concerns. Some very recent young architects have evaluated this information in the digital design environment by setting parameters concerning bodily movements. More sensitive and talented people reflected their factual sensibility in their architectural designs (See: Sancaklar Mosque).

In addition to Merleau-Ponty's discourse, what Norberg-Schulz (1962) and Pallasmaa (1996) advocated and wrote about human dimensions in architecture was not about ergonomic values but directly about real-life and ongoing human values. Norberg-Schulz revealed the world of human imagination with his unique research, clarifying how symbols refer to the world of values and ways of seeing. Pallasmaa's (2012) emphasis was that visual perception alone is insufficient to experience architecture and that designs from this point can be meaningless. Man's deep peripheral experience was a bundle of internalized sensations. Abel (2015) made an exciting addition to this intellectual accumulation with the concept of "extended self" by arguing that human mental and bodily sensations increase, change, and develop with

technological extensions since the media environment surrounding people affects human development and experiences.

Unfortunately, without understanding and interpreting Norberg-Schulz's valuable works, architects in postmodern times thought that they could reproduce the past, tried to carry the architectural symbols of the past into their buildings without internalizing them, and except for a few, they were not very successful visually. The eclectic Postmodern style could not build much on the dominant values and principles of the modern era in design and planning. The contextual approach is the improvement of this situation. On the other hand, not everyone fully understands human values, behaviors, intentions, and aspirations, which are the essence of phenomenological studies.

Concepts such as biophilia (love of nature), hyper-interconnectedness, and hyper-continuity, which are related to form rather than space, have been examined especially by Zaha Hadid and her followers and turned into structure and form (Betsky, 2018). As soon as it turned into a form, it froze because no matter how much it is discussed, the architectural space built with digital techniques directly limits itself as soon as it is built. The functional transformation of the inner compartments is challenging; it is almost impossible to make additions to the outside!

To illustrate, the Millennium Dome was the original name of the sizeable dome-shaped building on the Greenwich Peninsula in South East London, England, and it hosted a major exhibition celebrating the beginning of the third millennium. The exhibition was public from January 1 to December 31, 2000. The project itself and the exhibition were highly contested and attracted only half of the 12 million customers estimated by their sponsors; therefore, they were considered unsuccessful by the press. I saw it in 2006 when it was in shambles. All the original exhibit items had been sold or dismantled when I went, and Hadid did not exist anymore. However, the preservation of the dome was preferred, so the dome, with its external features, became a landmark. A behemoth that can be nothing!

Architecture and urban space are organized in line with specific needs and conditions. The history of architecture conveys this process by dividing it into phases and exemplifying it through buildings. These needs and conditions are determined by the arguments between the desire and potential of society to grow and expand in the face of industrialization, urbanization, and social stratification and the values attributed to man and his institutions. The craft of design and construction must be demonstrated through learning, awareness, and skilling.

Especially after the 60s, we believe that for the space to be produced at a flawless and satisfactory level, the architect should know the social-economic, cultural, political, and legal system in which he works and know which values of this system he serves. Knowing the user's worldview, values, and attitudes; mastery of static/dynamic anthropometric data; comprehending the processes of remembering, sensing, judging, and making sense; they need to recognize their characteristics such as status/prestige, identity/self, taste/meaning, and lifestyle. When analyzing the activity pattern of the building or environment, it is necessary to know that individual, physical, and interactive activities to be held in space and actions are different structures and require different sensitivities. For example, a type of building that serves a specific function should predict which activity will be considered dominant.

The space to be designed must respond to specific needs and purposes; space should provide physical comfort and geophysical and psycho-social security; function should be analyzed cognitively, as Kahn says, and the leading spaces that serve should be analyzed based on different standards and in a way that comprehends the energy of time (Scully, 1962). Spanish architect Ignasi de Solà-Morales, in a text on the "terrain vague" in 1990 (Solà-Morales, 1990,pp:122-24), said: "The architect, whose destiny is to give borders, orders and forms, should work on the flows, energies, new rhythms formed by the passage of time and the disappearance of boundaries in these critical areas, ignoring the oppressive and rentier forces on him, maintaining the perfection of the enlightenment tradition, but this time being planned-competent. Instead of studying form, one should study powers; instead of far, one should study the internalized, instead of optical, the haptic, instead of the figurative, the rhizomatic". Interestingly, just as rhizomatic thoughts change throughout history, they can also change depending on the primary function of the building (Gür, 2023).

I like to refer to them as "connecting concepts," concepts that can be dynamic, flexible, adaptable, interpreted, and developed as the connection between people and space. Although the order of priority may change depending on the situation and conditions, it is possible to list these concepts as follows: Robustness, health, efficiency, sustainability, security (prevention of building accidents, protection against unwanted creatures and threats, etc.), psychosocial security (privacy, avoiding crowding, having a sovereign area, acquiring personal space, etc.), easy orientation (location and direction), easy access, focus/environmental, compliance with relative layout rules, appropriate equipment/equipment arrangements, density, dynamism, barrier-freeness, comfort, spaciousness, purposefulness, perceptibility, imaginability, symbolism, innovation, originality, voluntarism, stimulation, identity, contextualism-universality, developability, possibility and temporality. While some of these connection concepts enable the various functions of the space to be fulfilled in a good, correct, and beautiful way, they are also directly related to the physical structuring of the space (Gür, 1996). The organization of space is primarily concerned with the immediate and distant environment of a space element, with its whole and with all of the relations established by its parts among themselves. Depending on the organization of the space, the primary function of the building, and the meaning of this function, I described it as follows;
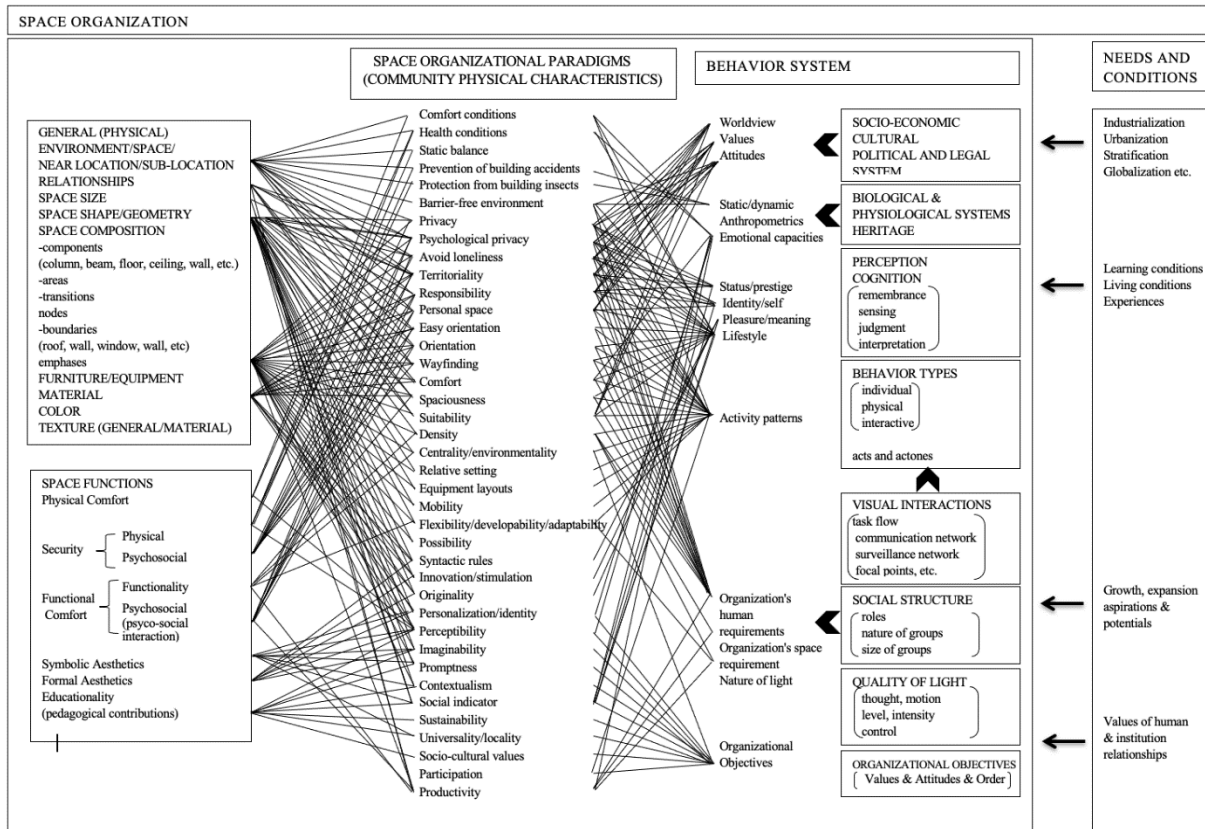
SPACE ORGANIZATION

SPACE ORGANIZATIONAL PARADIGMS
(COMMUNITY PHYSICAL CHARACTERISTICS)

BEHAVIOR SYSTEM

NEEDS AND CONDITIONS

GENERAL (PHYSICAL) ENVIRONMENT/SPACE/ NEAR LOCATION/SUB-LOCATION RELATIONSHIPS
SPACE SIZE
SPACE SHAPE/GEOMETRY
SPACE COMPOSITION
-components
(column, beam, floor, ceiling, wall, etc.)
-areas
-transitions
nodes
-boundaries
(roof, wall, window, wall, etc)
emphases
FURNITURE/EQUIPMENT
MATERIAL
COLOR
TEXTURE (GENERAL/MATERIAL)

SPACE FUNCTIONS
Physical Comfort

Security — Physical / Psychosocial

Functional Comfort — Functionality / Psychosocial (psyco-social interaction)

Symbolic Aesthetics
Formal Aesthetics
Educationality (pedagogical contributions)

Comfort conditions
Health conditions
Static balance
Prevention of building accidents
Protection from building insects
Barrier-free environment
Privacy
Psychological privacy
Avoid loneliness
Territoriality
Responsibility
Personal space
Easy orientation
Orientation
Wayfinding
Comfort
Spaciousness
Suitability
Density
Centrality/environmentality
Relative setting
Equipment layouts
Mobility
Flexibility/developability/adaptability
Possibility
Syntactic rules
Innovation/stimulation
Originality
Personalization/identity
Perceptibility
Imaginability
Promptness
Contextualism
Social indicator
Sustainability
Universality/locality
Socio-cultural values
Participation
Productivity

Worldview
Values
Attitudes

Static/dynamic
Anthropometrics
Emotional capacities

Status/prestige
Identity/self
Pleasure/meaning
Lifestyle

Activity patterns

Organization's human requirements
Organization's space requirement
Nature of light

Organizational Objectives

SOCIO-ECONOMIC CULTURAL POLITICAL AND LEGAL SYSTEM

BIOLOGICAL & PHYSIOLOGICAL SYSTEMS HERITAGE

PERCEPTION COGNITION
remembrance
sensing
judgment
interpretation

BEHAVIOR TYPES
individual
physical
interactive

acts and actones

VISUAL INTERACTIONS
task flow
communication network
surveillance network
focal points, etc.

SOCIAL STRUCTURE
roles
nature of groups
size of groups

QUALITY OF LIGHT
thought, motion
level, intensity
control

ORGANIZATIONAL OBJECTIVES
Values & Attitudes & Order

Industrialization
Urbanization
Stratification
Globalization etc.

Learning conditions
Living conditions
Experiences

Growth, expansion aspirations & potentials

Values of human & institution relationships

Figure 2. Organizational concepts of space as standard semantic codes of behavior and space (Gür, 1996; pp. 167, Table 1).

a. Site plan and ground floor plan/environment-city relationship,
b. Floor area form, the geometry of the section, and the structural solution,
c. Geometry and functional porosity and connectedness of all elements limiting the interior space,
d. Reinforcement and equipment assembly and geometry,
e. Basic values and geometry of architectonics, solution of connection points,
f. Flows, energies of all the above, new rhythms formed by the passage of time, and the disappearance of boundaries.

Space components (columns, beams, floors, ceilings, walls, etc.) contribute to the composition of the space depending on the technology and techniques from which they are manufactured. They perform tasks other than their primary duties in spatial architectonic spaces, such as walls, windows, doors, stairs, foci, nodes, regions, transitions, accents, and contours, which are essential in organizing space. The components of geographical space can be predicted as land or sea formations, geopolitical regions, geographical regions, urban-rural regions, underdeveloped-highly developed regions, and efficient-unproductive regions, depending on the purpose of the study. It is in the tradition of urban design to evaluate all the spaces between city buildings as outdoor or urban social spaces (Ashihara, 1750).

Nodal points are places where many different activities occur together in cities or buildings, hosting activities such as trade, marketing, promotion, launch, recreation, waiting, information, meeting, socializing, celebration, and transportation simultaneously. Most of these come to life

in the entrance areas of the buildings; in buildings, these are the foci within the task flow chart. Nodes can be in regional or sub-regional centers, transitions, and borders. In a Turkish bath, the knot is the navel stone in the center, while in a house, even the kitchen, entrance hall, and living room can take on this task. The boundaries of the nodes need to have the desired level of permeability, depending on the underlying function they host. In addition, nodes play an essential role in the identity of cities and buildings as areas where basic functions occur.

Regions, essential elements of space organization, can be defined as functional and structural; physically, socially, and symbolically, they can be distinguished from the whole. Boundary elements that determine zones in buildings include walls, railings, poles, elevations, material texture, and even colors. For example, foreground/background separation is a zoning and function-based in housing. Cultural zones in a university, such as auditoriums, libraries, sports venues, cafeterias, and cafes, are recreational-social zones, and the details in the organization are immediately noticeable.

As for roads and crossings, these are transportation networks that connect functional areas in the city and connect cities to the world's geography. Roads, bridges, tunnels, seas, rivers, airways, pedestrian paths, and the access networks they create are some of the features that make cities. For example, Kurosawa and Hillier (2001) examined access in grid and tree systems and argued that diagonal paths best achieve human relations. In the same way, buildings have a similar network system that connects the units horizontally and vertically. Various types of stairs and elevators, entrances, halls, lobbies, corridors, and even Turkish house sofas can be counted in this context. These space elements affect the space with materials and technology and their organizational roles.

The boundaries of urban space can be natural elements such as mountains, seas, and valleys, as well as workplaces, shopping malls, factories, universities, green belts, and even streets that are functionally limited to the city (Lang et al., 1980). The boundary elements present or created in the delimitation are as crucial as the region they delimit. They ascribe meanings, from privacy to the publicity of the area they demarcate. External spaces exist within natural, political, and structural boundaries or are structured to prevent functional conflict. Thus, they serve to ensure human comfort. Among all the borders, the most classic element is the walls. They provide visual, tactile, auditory, and light privacy. Solid walls undertake complete dividing tasks, while low panel walls indicate a division conducive to communication. Transparent walls, counters, and tellers are just polite threats. In addition to these, vertical circulation elements can also be considered obstacles or enabling elements.

On the other hand, focal pointers, such as the service counter, stairs, pillars, and panels, simultaneously act as a separation image, i.e., a dividing element. Apart from the main functions, such as lighting elements as focus indicators, flooring material as functional difference markers, and reinforcements as separation/invitations, depending on the design principle, they can organize the space for another purpose. However, great architectural revolutions emerge as significant typological changes that overturn the total "idea" and radically change the design idea and the organization of space (Gür, 2008).

To Conclude

How the space is organized is the most crucial feature of space that shapes and directs human behavior. It is even possible to manipulate how the space is organized and direct people to certain behaviors. Gropius (1943) said we should teach people how to behave. I once criticized him; why don't we give him what he wants and what he is used to? Now, I say that space has the power to influence, determine, and customize human behavior. So, should we give the user what he wants, or should we direct him to how we want him to behave? Can the design style of the space be a teaching tool for the user from either the global north or south? A group of young writers has been questioning this again very recently (Kabashi, Kaltrine, et al., 2023). This explains very well why I placed the meaning of architecture in that theoretical core. Architecture has meaning, it is crucial, and it can be manipulated. Needless to say!

References

Abel, C. (2015). [2017]. Architecture and Identity: Responses to Cultural and Technological Change, 3rd Edition, London: Routledge.

Ashihara, Y. (1981) [1750]. Exterior Design in Architecture, New York: Van Nostrand Reinhold.

Betsky, A. (2018). The Complete Zaha Hadid (Expanded and Updated), London: Thames & Hudson.

Foucault, M. (1969). Archaeology of Knowledge, A.M. Sheridan Smith (trans.) d, London, Routledge.

Foucault, M. (1991). The Foucault Effect: Studies in Governmentality, Graham Burchell, Colin Gordon, and Peter Miller (compiled by), With Two Lectures by and an Interview with Michel Foucault, Chicago: University of Chicago Press.

Gropius, W. (1943). The Scope of Total Architecture, London: Collier.

Gür, Ş. Ö. (1996). Mekân Örgütlenmesi, Trabzon: Gür Yayıncılık.

Gür, Ş. Ö. (2008). "What is Creative? Creativity in Architectural Theory, Practice and Education" Inaugurating Lecture, in Nilgün Kuloğlu, Asu Beşgen ve Ali Asasoğlu (eds.), Designtrain Congress Proceedings-Vol. I, Amsterdam, June 4-7 2008, pp. 9–25.

Gür, Ş. Ö. (2023). Modern ve Sonrası Mimarlık Tarihi Boyunca Mekan Örgütlenmesinin Evrimi, İstanbul: YEM Yayın.

Gür, Ş. Ö. (2024). Küresel Güneyin Dayanılmaz Hafifliği: Mimarlıkta Yeni Bir Etik Zamanı!, MİMARCA96, UCTCEA Chamber of Architects Journal, No:1 (to be published).

Kabashi, Kaltrine, et al. (2023). Rebuilding an Existing Foundation: How Architecture Shapes Behavior, Epoka University, Faculty of Civil Engineering and Architecture, Department of Architecture.

Kurosawa, R. & Hillier, D. J. (2001). "Tree-Structured Grid Model of Line and Polarization Variability from Massive Binaries," Astronomy and Astrophysics 379 (1), University of Pittsburgh.

Lang, J. and Gür, Ş. Ö. et al. (1980). "Çocuk ve Çevresi: Çocuk Oyun Alanları Olarak Sokaklarımız", KTÜ: Mimarlık Bülteni 5, pp. 71-76.

Merleau-Ponty, M. (1945) [1964] [1968]. "The Intertwining-the Chiasm," Hazel E. Barnes (compiled by), The Visible and the Invisible, Claude Lefort ve Alphonso Lingis Evanston (trans.), IL: Northwestern University Press; (1973) [1969], Prose of the World,

Evanston, IL: Northwestern University Press; (2002) [1945], Phenomenology of Perception, London: Routledge.

Norberg-Schulz, C. (1962) [1968]. Intentions in Architecture, Cambridge: The MIT.

Norberg-Schulz, C. (1974) [1971]. Existence, Space and Architecture, London: Praeger.

Norberg-Schulz, C. (1980a). The Meaning in Western Architecture (rev.), New York: Rizzoli.

Norberg-Schulz, C. (1980b). Genius Loci: Towards a Phenomenology of Architecture, New York: Rizzoli.

Norberg-Schulz, C. (1985). The Concept of Dwelling: On the Way to Figurative Architecture, (Architectural Documents), New York: Rizzoli.

Pallasmaa, J. (1996). The Eyes of the Skin: Architecture and the Senses, Hoboken, New Jersey: John Wiley and Sons.

Pallasmaa, J. (2012). In Praise of Vagueness, Elizabeth Danze ve Stephen Sonnenberg (compiled by.), Space & Psyche, pp. 254-270.

Pérez-Gómez, A. (2006). Built Upon Love: Architectural Longing after Ethics and Aesthetics, Cambridge: The MIT Press.

Pierce, C. S. (1982). Writings of Charles S. Peirce: 1872-1878, Christian J. W. Kloesel (compiled by), Indiana University Press.

Scully, V. (1962). Louis I. Kahn, New York: George Braziller.

Sola-Morales, R. I. de (1990) [2007]. Terrain Vague, Dean Almy (compiled by), Center, Volume 14: On Landscape Urbanism, The Center for American Architecture and Design Pubs. In landscapeandurbanism.blogspot.com; C. Davidson (compiled by) Anyplace (1995). Cambridge: The MIT Press, pp. 118–123.

Research Article

ASSESSING PUBLIC SPACE COMPLEXITY: A COMPARATIVE STUDY OF WATERFRONT AREAS IN ISTANBUL'S BOSPHORUS DISTRICT

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Abstract Public space is an essential symbol of connection and integrity for both citizens and cities, serving as a platform for interaction and shared experiences. Among public spaces, coastal areas hold significant importance as they facilitate integration between citizens and water, offering opportunities for transportation and recreational activities. This paper aims evaluating complexity on public space in waterfront in comparison with the two side in Istanbul based on Carmona's classification. The study utilizes a comparative analysis based on land use data from the analysis by using Geographic Information System (GIS). Land use data, in essence, provides embedded information on accessibility. By analyzing these classifications, the paper seeks to shed light on the similarities and differences in the public space characteristics and public access between the coastal areas of the Bosphorus District. Preliminary findings indicate that the positive space characteristics in both sides are comparable. However, the ratio of ambiguous and private spaces varies due to historical factors, property ownership and land use patterns. These influence the nature and accessibility of public spaces, thereby contributing to the observed diversity along the waterfront. The study's findings have implications for urban planning and the development of inclusive public spaces in coastal areas.

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Introduction

Public space is one of the symbols of the connection and integration of citizens with the city. At the same time, it is described as a space that meets the needs of citizens by serving different age and socio-economic groups, strongly connects citizens to each other, urban space, and the world, and develops a sense of place (Carr et al., 1992). This multifaceted role of public space creates an interface between social, private, and public interests (Zukin, 1995). Furthermore, public spaces also serve as spaces designed for outdoor activities (Lynch, 1981). These open spaces are important as accessible spaces for public interactive activities (Madanipour, 2003).

However, the functions of public space are not limited to this. Four important social roles of public space have been identified such as functioning as a realm for social life, being a gathering place for diverse social groups, presenting symbols and images of society, and being part of the communication network among urban activities (Thomas, 1991).

In this context, public space plays a significant role in the sustainability of cities and the preservation of their social fabric (Mehta, 2004). Moreover, people's need for public space to engage in social and recreational activities such as shopping, transport, play, interaction with each other, and recreation emphasizes the importance of these spaces (Carmona, 2015).

The diversity of public spaces extends to the coastal areas. Scholars have acknowledged the notable importance of urban waterfronts as dynamic public spaces that facilitate the interaction between citizens and bodies of water. However, the relationship between a city and its waterfront has changed throughout history in terms of the function and land use of the waterfront for agriculture, transportation, military zone, commercial, industrial, and recreational (Timur, 2013; Saribiyik, 2022). While the primitive port cities in the pre-industrial revolution period had a strong spatial and functional relationship with the coastal areas in ancient and medieval times, the relationship between cities and coasts has weakened due to rapid commercial activities and industrialization since the 19th century. After industrial growth and the introduction of containers and ro-ro harbors, people began to depart from waterfronts to city centers in the mid-20th century. The industrial areas moved away from coastal areas because of changes in maritime technology in 1960–1980, defining it as retreating from the waterfront. Lastly, redevelopment of the waterfront planning projects began with large-scale modern port commercial areas (Hoyle, 1998).

Today, urban waterfront areas face numerous challenges that hinder their full potential as vibrant and inclusive public spaces. Despite their potential to enhance to the sense of place, belonging, and recreational needs of citizens, several issues pose significant obstacles to their effective utilization and development. These challenges include inadequate public access and connectivity, conflicting land uses and ownership, a lack of comprehensive planning, and the presence of ambiguous spaces, as observed in Istanbul's coastal areas.

Despite the acknowledged value of public spaces and urban waterfront areas as integral elements of cities, there is a necessity to gain a deeper comprehension of their intricacy and categorization within distinct contexts. The lack of understanding in this area is especially

apparent when considering the Bosphorus region of Istanbul, where the Anatolian and European sides display discernible traits and dynamics. Consequently, a dearth of comprehensive scholarly investigations exists regarding the categorization and analysis of public spaces situated on both banks of Istanbul's Bosphorus. This deficiency impedes the formulation of efficacious strategies for managing urban public spaces and making informed planning choices by local governing bodies. In order to bridge these existing knowledge gaps, the aim of this research is to conduct a spatial analysis and categorization of the public spaces situated on both the Anatolian and European sides of Istanbul's Bosphorus region. The study provides accessibility information from activity and land use characteristics in the coastal area, which is one of an important part of the city, improving the relationship and integration between the citizens and the city. This will be accomplished through the utilization of advanced Geographic Information System (GIS) techniques, coupled with the application of Carmona's well-established classification framework.

Literature Background for Public Spaces Classifications

Over the last forty years, literature on contemporary public space has included debates about the inclusivity and exclusivity of public spaces in terms of privatization of public space and publicness. One group of academicians (such as Sennet, 1992; Sorkin, 1992; Micthell, 1995) advocate for the "end of public space" due to the privatization and commercialization of the spaces. Another group (for example, Carmona and Wunderlich, 2012; Langstraat and Van Melik, 2013) depicts public spaces based on their production, management, control, and use, challenging the idea of the "end of public space" (Ercan & Memluk, 2015) (Table 1).

Public spaces appear as a complex and multidimensional concept when analyzed from various perspectives. This multidimensionality shapes the definition and meaning of public spaces. Kohn (2004) defines public space based on three basic aspects: ownership, accessibility, and intersubjectivity. While these dimensions help us understand the diversity of public spaces, it is emphasized that ownership and accessibility alone cannot fully describe public space without considering intersubjectivity, which represents the distinction between public spaces in terms of interaction and communication (Kohn, 2004).

However, Carmona (2010b) proposes a classification based on function, perception and ownership to further expand the description of public space. This classification increases the depth of public space by combining design, socio-cultural, and political-economic perspectives. Moreover, different models and dimensions have also been presented to further understand the specificity of public spaces. Varna and Tiesdell (2010) propose a Star Model for assessing the publicness of public space depend on five aspects: ownership, control, civility, physical configuration and revitalization. Langstraat & Van Melik, 2013, introduces the concept of pseudo-public space, describing four dimensions of "publicness": ownership, management, accessibility, and inclusiveness in their OMAI model. This approach focuses on the privatization of public space and its implications for access and inclusivity rather than focusing on the "end" or "loss" of public spaces.

The complex relationship between public and private areas is described as a continuum that combines elements of both public and private areas with varying levels of publicness (Akkar

2005a, 2005b; Mantey 2017). To better understand this relationship, Banerjee (2001) suggests focusing on the notion of public life instead of public spaces alone noting that small businesses such as cafes, bookshops and other third places contribute not only increasing public life but also supporting local economy. These spaces show that the concept of public life is not limited to public spaces. Privately owned public spaces increase limit over usage, behaviour, and access, although both publicly and privately owned spaces tend to promote public use (Nemeth & Schmidt, 2011). This reflects a balance in which public and private spaces interact.

Contemporary public spaces can be assessed in two phases: the planning process, which considers the extent of public and/or private ownership and accessibility, and the planning product, which focuses on the perceived value and publicness of the spaces (Leclercq et al., 2020). While people may prefer private-public spaces in terms of high levels of maintenance and control, safety and surveillance, there is a perception that privatised spaces do not tolerate or allow certain activities, behaviours and people (Leclercq & Pojani, 2023). Therefore, the complexity of public and private spaces and people's perceptions are important factors to consider in terms of urban planning, design, and management.

Public spaces are classified into various types based on various criteria, such as function, control, accessibility, and ownership, and these classifications help us understand various aspects of public spaces. Gehl & Gemzoe (2001) propose a classification system for "new" city spaces, which includes main city squares, recreational squares, promenades, traffic squares and monumental squares. Similarly, Carr et al. (1992) provide an extensive list of various types of public spaces as public parks, squares and plazas, memorials, markets, streets, children's playgrounds, greenways and parkways, atrium and indoor marketplaces and waterfronts.

Further, Critiques of contemporary public spaces are organized in two categories: under-management spaces, such as neglected, invaded, exclusionary, segregates and domestic, third and virtual spaces, and over-management spaces such as privatized, consumption, invented and scary spaces (Carmona, 2010a).

Dines et al. (2006) list public areas as everyday places, places of meaning, social environments, places of retreat, and negative public spaces. Malone (2002) classifies public spaces and streets into two main categories based on spatial boundaries: strongly classified spaces with well-defined boundaries, such as churches, and shopping malls, and weakly classified spaces with open boundaries, such as sporting venues, carnival, and festival areas (adapted from Sibley, 1995).

Al-Hagla (2008) classifies open spaces as green spaces and grey spaces. Green spaces refer to vegetated land or structures, water, or geological characteristics, including parks, gardens, children's playgrounds, sports facility areas, green corridors, natural and semi-natural green areas. Grey spaces refer to urban areas such as squares, plazas, marketplaces, pedestrian streets, promenades, and seafronts (Al-Hagla, 2008). Moreover, Stanley et al. (2012) list seven types of open spaces, including food production areas, parks and gardens, recreational spaces, plazas, streets, transport facility areas and incidental spaces. Their typology is based on the form, function, and land cover of open spaces, creating a matrix that encompasses the

seven categories of open spaces and their scale (city, intermediate, residence) to represent green, grey, and green/grey spaces (Stanley et al., 2012).

Furthermore, public open spaces in private developments are assessed in five cluster types based on spatial justice performance that are described as edge zone, hide and seek, pseudo-public space, consumer's paradise and public plaza by Jian et. al (2020).

Open public spaces are classified based on morphology, form and function including streets, squares, parks, gardens and cemeteries, linear systems and green corridors, outdoor sports and recreation areas, campground and picnic areas and natural and semi natural green spaces. This classification is formed within a framework that includes interrelated layers such as land, the public realm, built form, program, trends, and fashions (Sandalack & Uribe, 2010).

Mantey and Kepkowicz (2018) enhance a typology of public spaces based on five criteria intended uses (all public with no restrictions, all public but in the role of consumers, selected groups and private users), time limits on access, prevalent forms of control (absence of control, civic observation, monitoring, security guards, private owner's control), intended function, and visual characteristics (type of location and equipment for the users). Dovey and Pafka (2020) have also purpose comprehensive typology for mapping the publicness of public spaces in terms of criteria of control and accessibility and ownership. The typology represented on a graph aligned along two axes as control and resulting in six overlapping categories of publicness: open-public space, ticketed space, inaccessible public space, invitation space, quasi-public space, and open-private space (Dovey & Pafka, 2020).

Table 1. Classifications of public space.

Authors	Criteria
Carr et. al, 1992	form and function
Sandalack& Ulrick, 2010	form and function
Malone, 2002	spatial boundaries
Dines et al., 2006	advantages and disadvantages for a sense of well-being
Carmona, 2010a	classification of critiques
Carmona, 2010b	function, perception, and ownership
Al-Halga, 2008	type of surface (natural and civic) for open spaces
Stanley et. Al, 2012	form, function, and land cover of open spaces
Mantey & Kepkowicz , 2018	function, uses, accessibility (time limit), control, form
Dovey & Pafka, 2020	level of publicness based on ownership, management, users' perception

Data and Methodology

This research employed a mixed-methods approach to classify and analyze the public spaces within Istanbul's Bosphorus region (Figure 1). First, Carmona's public space classification served as a framework for the spatial analysis. The land use data were analyzed and categorized into specific types of public spaces, positive spaces, ambiguous spaces, negative spaces and private spaces. Next, spatial analysis was conducted using GIS techniques to analyze the distribution and characteristics of public spaces within the study area. GIS software facilitated the visualization and mapping of the land-use data. The third stage involves the calculation and visualisation of the accessibility of the coastline derived from land use. The

final stage involved the evaluation and comparison of the public spaces between the Anatolian Side and the European Side of the Bosphorus. Descriptive statistics were used to quantify the distribution and proportion of different types of public spaces on each side. Statistical measures, such as percentages and ratios, were used to compare the findings and identify any notable differences or similarities between the two sides.
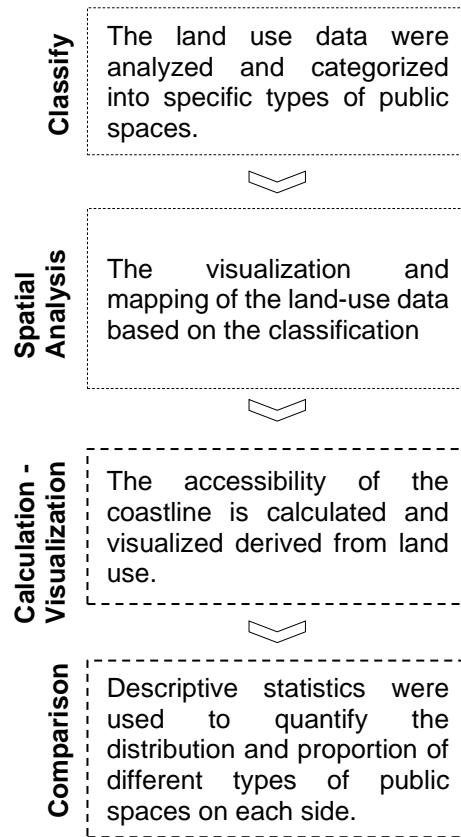
Classify
The land use data were analyzed and categorized into specific types of public spaces.

Spatial Analysis
The visualization and mapping of the land-use data based on the classification

Calculation - Visualization
The accessibility of the coastline is calculated and visualized derived from land use.

Comparison
Descriptive statistics were used to quantify the distribution and proportion of different types of public spaces on each side.

Figure 1. Methodology flowchart of the study.

Study area, sampling design and data collection

Istanbul, located on coast between Asia and Europe continents and split by the Bosphorus, has a coastal area that has been shaped by different settlement types and cultures throughout history. Istanbul is often referred to as "the city of waterfronts" because it stretches linearly along the coast until the 1960s (Yenen et. al, 1993). However, the city has lost its waterfront identity due to rapid urbanization (Yazgan, Sel, 2014). The waterfront areas of Istanbul have undergone radical changes due to cultural, political, technical, and morphological transformations (Kuban, 2020). In 2000s and beyond, the city expands towards the north and the sea leading to the construction of filling areas designed as green and recreational spaces along the coastline. Moreover, investment projects such as hotels, residential areas and marinas have been developed on the coastline of Istanbul in 21st century (Ozkan, 2017; Sarıbıyık, 2022). Kuban (2020) points out that water is an indispensable part of Istanbul's urban image, with landmarks such as the Golden Horn (Haliç), historical ports, and shipyards. The Bosphorus serves as an international transportation route with intense waterway traffic, while the Golden Horn strait has inner-city transportation paths (Turkoglu, Secmen, 2019).

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Throughout history the waterfront areas of Istanbul have changed in terms of land-use characteristics due to urbanization. Today, the waterfront areas serve multiple functions, including commercial, residential, recreational, and transportation uses.

In context of Istanbul waterfront, the Istanbul Planning Agency reported in their spatial analysis for the Vision 2050 planning study that the forty-two percent of Istanbul urban waterfront area is classified as accessible public spaces, eighteen percent as semi-public spaces (educational areas and public administrative areas), and forty percent as private areas inaccessible to the public. These classifications were based on the spatial analysis of the Istanbul Environmental Revision Plan in 2016 and the World Cities Culture Forum studies in 2019 (IPA, 2020). Secmen and Turkoglu (2022) highlight that connectivity is an important parameter for the spatial evaluation of waterfronts in terms of quality of physical, functional and visual access of open spaces while continuity is another significant criterion for waterfront accessibility, referring to uninterrupted physical and visual connections. Istanbul's waterfront areas have weak connectivity and continuity due to insufficient public transportation nodes and pedestrian connections, although historical waterfront areas located at the intersection of the Golden Horn, the Marmara Sea, and the Bosphorus have better visual access than the rest (Seçmen, Turkoglu, 2022). Moreover, Sarıbıyık (2022) evaluated the spatial features of urban open spaces on the Marmara Coast of the Asian Side of Istanbul with five criteria: accessibility and continuity, image, activity diversity, socialization potential, and user density and security. The study found that the Marmara Coast of the Asian side of the city exhibited weak spatial characteristics due to weak connections with the water and the city, a lack of quality in the surrounding urban areas and transportation, and the distribution of public and private properties (Sarıbıyık, 2022). Another research conducted by Turkoglu and Secmen (2019) emphasized the importance of urban waterfront parks for the quality of life in Istanbul. According to data from the Istanbul Metropolitan Municipality in 2017, waterfront parks accounted for approximately thirty percent of green areas in the city, which is relatively low for a city surrounded by the sea (Turkoglu, Secmen, 2019). Furthermore, the satisfaction levels of urban green areas along the Marmara Coast in Istanbul were found to be higher than those along the Bosphorus waterfront, especially in parks located near residential areas, based on an analysis of the use and satisfaction levels of urban green areas (Koramaz, Turkoğlu, 2014). Consequently, the waterfront of Istanbul presents a complex variety of public space types due to its historical development and multi-layered urban pattern. Historical buildings, palaces, museums and *yalı (waterside mansions)* are well-known symbols of Bosphorus coastal area in Istanbul. On the other hand the public areas facing problems in terms of publicness are crucial parts of the waterfront and serve as important nodes for the city's residents. Therefore, the Bosphorus waterfront areas, with their multi-layered characteristics and complexity in terms of the publicness of public spaces, are being analyzed and classified as part of this study, encompassing both the Anatolian Side and the European Side.
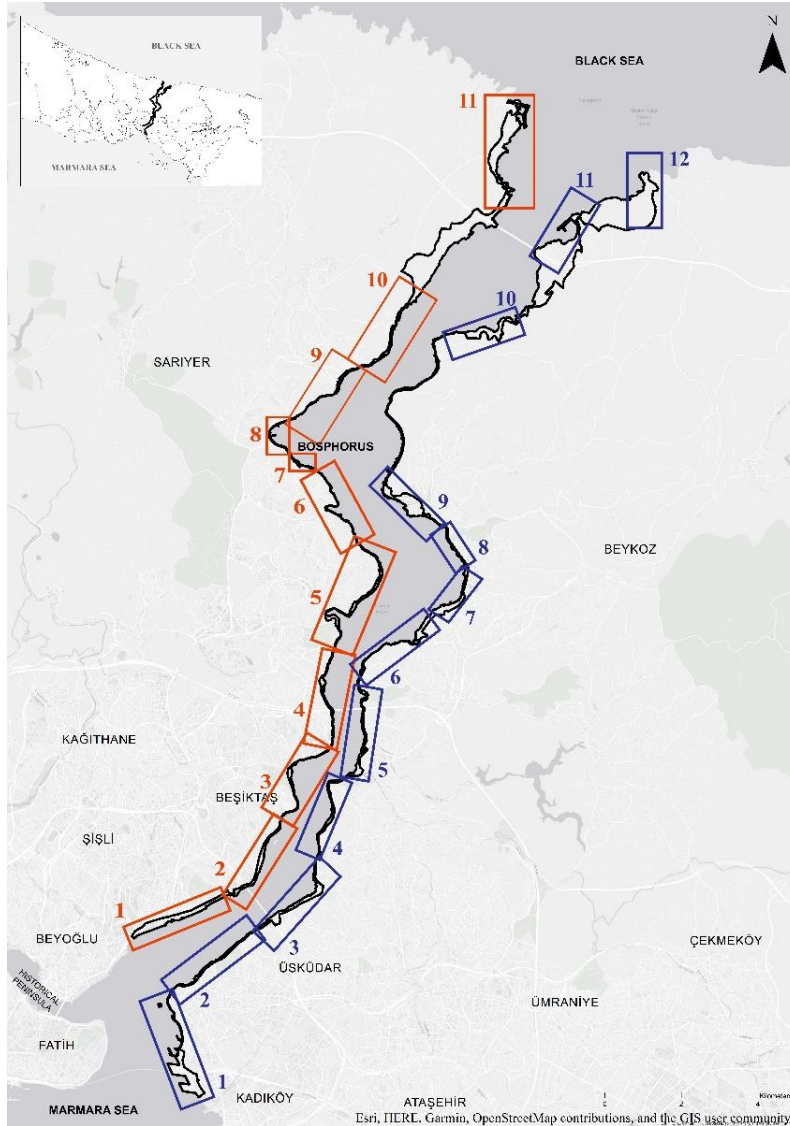
Figure 2. The case study border (The maps organized by the authors).

The complexity of Istanbul's waterfront pattern based on the uses of public spaces were evaluated based on land uses characteristics on spatial analysis by using GIS. The study area is bordered by the main road along the coast and the coastline itself, covering four districts: Beşiktaş, Sarıyer, Üsküdar, and Beykoz. Land-use mapping data is obtained from the Urban Planning Department of the Istanbul Metropolitan Municipality (IMM). Additionally, an open-source base map is used, provided by ArcGIS base maps. Finally, the waterfront areas of the Bosphorus districts are compared in terms of their public space characteristics and publicness.

Analysis

This stage involves spatial analysis based on the classification of public spaces using GIS. The land use data is classified according to Carmona's public space typology, which includes positive spaces, negative spaces, ambiguous spaces, and private spaces. In the classification of urban space types, "positive" spaces encompass natural or semi-natural urban spaces, civic spaces, and public open spaces. "Negative" spaces include movement spaces, service spaces, leftover spaces, and undefined spaces. "Ambiguous" spaces comprise interchange

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spaces, public and private spaces, conspicuous spaces, internalized public spaces, retail spaces, third-place spaces, private-public spaces, visible private spaces, interface spaces, and user-selecting spaces. "Private" spaces are consists of private open spaces, external private spaces and internal private spaces (Carmona, 2010b).

It's worth noting that while some land use types, such as cultural facility areas, social facility areas, and public administration areas, may fall under the same class according to Carmona's classification, they are individually classified in this study. In other words, a cultural area can be classified as a positive space, while another may be characterized as a private space. For example, both Çırağan Palace in Beşiktaş and Beylerbeyi Palace in Üsküdar are identified as cultural facility areas. However, Çırağan Palace is classified as an ambiguous space due to its use as a hotel, whereas Beylerbeyi Palace is listed as a positive space because it provides free access to its garden.

In the context of spatial analysis, the land use analysis from the Istanbul Metropolitan Municipality (IMM) is evaluated based on Carmona's public space typology using GIS (Table 2). Positive spaces include park and green areas, squares, pedestrian ways, piers, fishing ports, cemeteries, forests, cultural facility areas, fair and festival areas, and beaches. Technical facilities, vacant areas, and car parking areas are categorized as negative spaces. Ambiguous spaces comprise health service areas, educational areas, religious facility areas, commercial areas, residential and commercial mixed-use areas, tourism facility areas, cultural facility areas, private beaches, social facility areas, fair and festival areas, ferryboat piers, and public administration areas. Residential areas, rural residential areas, public administrative areas, cultural facility areas, harbours, industrial areas, and agricultural areas are listed as private spaces. Military areas are excluded from the spatial analysis to ensure that they do not incorrectly impact the study results due to the land they cover. Besides, the road locating coast are excluded from the analysis, too, owing to that the scope of the analysis comprises between the middle of roads and the coast.

Table 2. Classification of land uses for the study area.

Classes	Land Uses
Positive spaces	parks and green areas, squares, cultural facility areas, fair and festival areas, pedestrian ways, marinas, piers fishing ports, forests, beaches, cemeteries
Ambiguous spaces	health service areas, educational areas, religious facility areas, commercial areas, residential and commercial (mixed used) areas, tourism facility areas, cultural facility areas, private beaches, social facility areas, fair and festival areas, ferryboat pier, public administration areas
Negative spaces	technical facilities, vacant areas, car parking areas
Privates' spaces	residential areas, rural residential areas, public administrative areas, cultural facility areas, harbour, industrial areas and agricultural areas

Land use data, in essence, provides embedded information on accessibility. It is possible to reveal this information with Carmona's classification method. In this study, Carmona's technique is combined with geographical information systems to visualize access to the coastline (Figure 3). In this method, firstly, the starting and ending points where the land use types along the coastline intersect with the coastline are identified. Then, by calculating the length of the start and end points along the coastline in the GIS environment, the coastal length

of each land use type was calculated and visualized (Figure 7). Thus, the relationship between the parts of the coastline that are open to public access and the parts that are restricted or inaccessible was revealed (Figure 8). In other words, this GIS analysis shows the free public access along the coastline in Bosphorus based on the accessibility information obtained from land use characteristic.
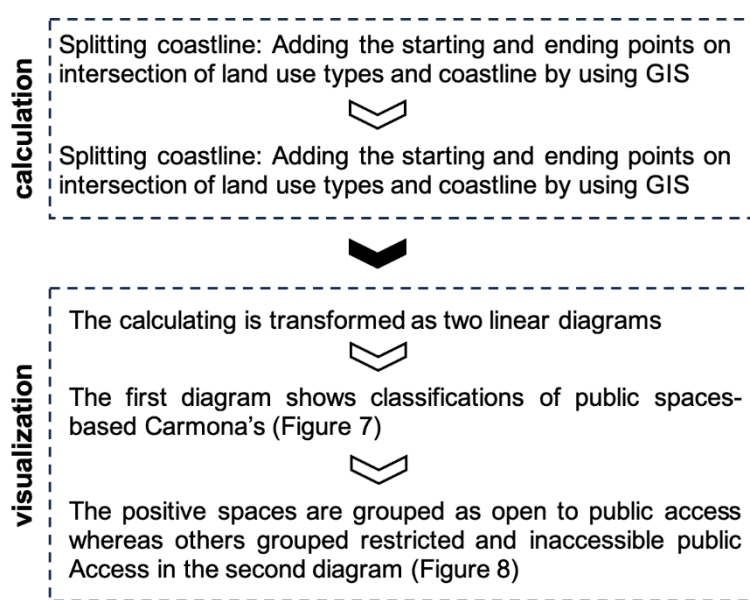

Figure 3. The diagram shows that how the accessibility information obtained from land use analysis by using GIS.

Findings and Discussion

To begin with, the numerical results reveal that positive spaces cover 51 percent of the waterfront on the European Side (687,131 sqm), while the Anatolian Side comprises 44 percent positive space (1,092,236 sqm). Additionally, ambiguous spaces account for approximately 300,000 sqm, representing 39 percent of the European Side coast, whereas they cover only 12 percent of the Anatolian Side coast. There is a significant difference in private areas, covering 218,439 sqm (16 percent) of the European Side coast, compared to 810,580 sqm (33 percent) on the Anatolian Side. Negative spaces constitute 5 percent of the European Side waterfront (63,168 sqm), whereas they cover 11 percent of the Anatolian Side coastal area (283,952 sqm) (Table 3).

Table 3. Ratio of classification on land uses (area and percentage distribution).

Class	European Side		Anatolian Side	
	Area (sqm)	Ratio (%)	Area (sqm)	Ratio (%)
Positive Spaces	687.13	51	1.092.236	44
Negative Spaces	63.168	5	283.952	11
Ambiguous Spaces	387.667	29	302.772	12
Private Spaces	218.439	16	810.580	33

The results demonstrate that positive spaces cover approximately half of the study area on both the European side and Anatolian side, thanks to the presence of forest, park and green areas. As mentioned earlier, the study area border is defined between the main road on coast and coastline resulting in a higher ratio of forest areas due to the gradual expansion of the

study area northward. Another important finding is that piers, fishing ports, pedestrian ways, and parks along the coast play a critical role in enhancing the publicness of the waterfront area. For example, the pedestrian ways between Kuruçesme and Baltalımanı, Emirgan and İstinye, Yeniköy and Kireçburnu, as well as Üsküdar Pier and Haydarpaşa serve to connect people to the sea and foster a sense of belonging in waterfront cities. From this perspective, the European Side is more favorable in terms of public access to coastal areas. Parks and green areas along the coast also contribute significantly to the promotion of the waterfront and the strengthening of the relationship between citizens and the coast. Both Bosphorus sides feature various parks and green areas, such as Paşa Liman Park in Üsküdar and Kireçburnu Haydar Aliyev Park in Sarıyer. Notably, Beşiktaş has more green spaces compared to Üsküdar, mainly due to parks like Kurucesme Park, Bebek Park, and Painting Museum Parks along the coastal areas. However, both sides of the Bosphorus exhibit a similar ratio of parks and green spaces.

The complexity of public spaces becomes apparent with a high proportion of ambiguous spaces, particularly on the European Side, especially in Besiktas's coastal area. Besiktas, being one of the central districts of Istanbul, features multi-functional land uses such as commercial areas, educational areas, cultural facility areas, and tourism areas, leading to a higher prevalence of ambiguous spaces. These spaces can be described as physically private but visually public or publicly owned but functionally private and user-determined, which adds complexity to the waterfront public spaces. Service areas like hotels, cafes, and restaurants contribute to the increased ambiguity in public space usage, where private management restricts full public access despite their formal public ownership.

Figure 4. The mapping for classification of public spaces on the Bosporus coastal line (The maps organized by the authors).

On the other hand, the Anatolian Side exhibits a higher ratio of private spaces compared to the European Side, primarily due to the presence of residential areas such as "yalı" (historical waterfront mansions), Haydarpasa Harbour, and old industrial facilities along the Beykoz coastal area. Residential areas are privately owned, making land property a significant obstacle to the publicness of the Bosphorus waterfront, reflecting the city's historical

background. Furthermore, negative spaces occupy a larger area on the Anatolian Side than on the European Side, mainly due to construction areas and technical facilities on that side. Hence, the classifications are developed in terms of public accessibility to waterfront areas as the area having public access completely and the area preventing the connectivity and continuity between public spaces for freely access to the public spaces (Figure 4). The analysis results are shown in detail and understandable in Figure 5 and Figure 6 based on areas from Figure 2.
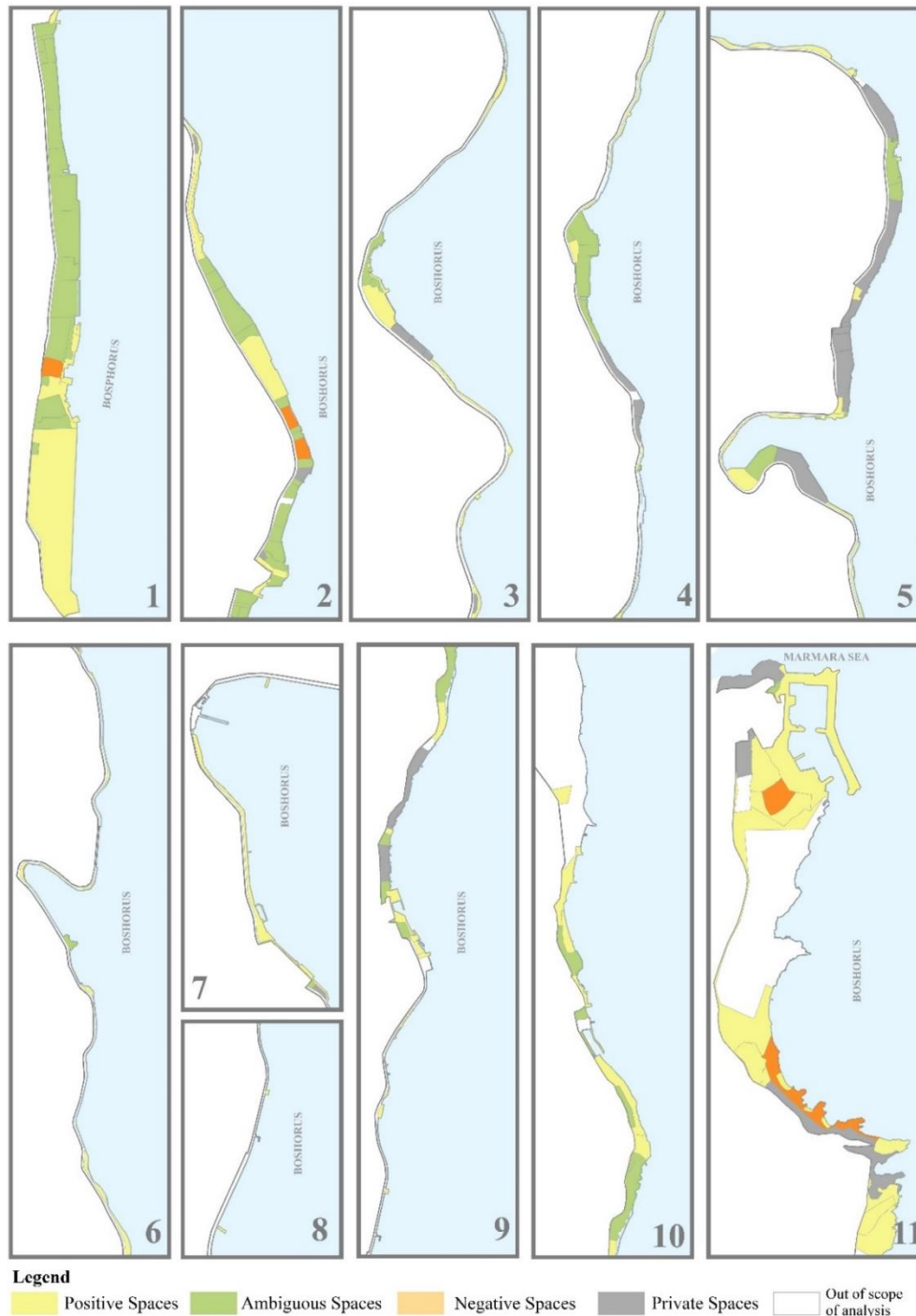
Figure 5. The mapping for classification of public spaces on European Side the Bosporus coastal line (The maps organized by the authors).
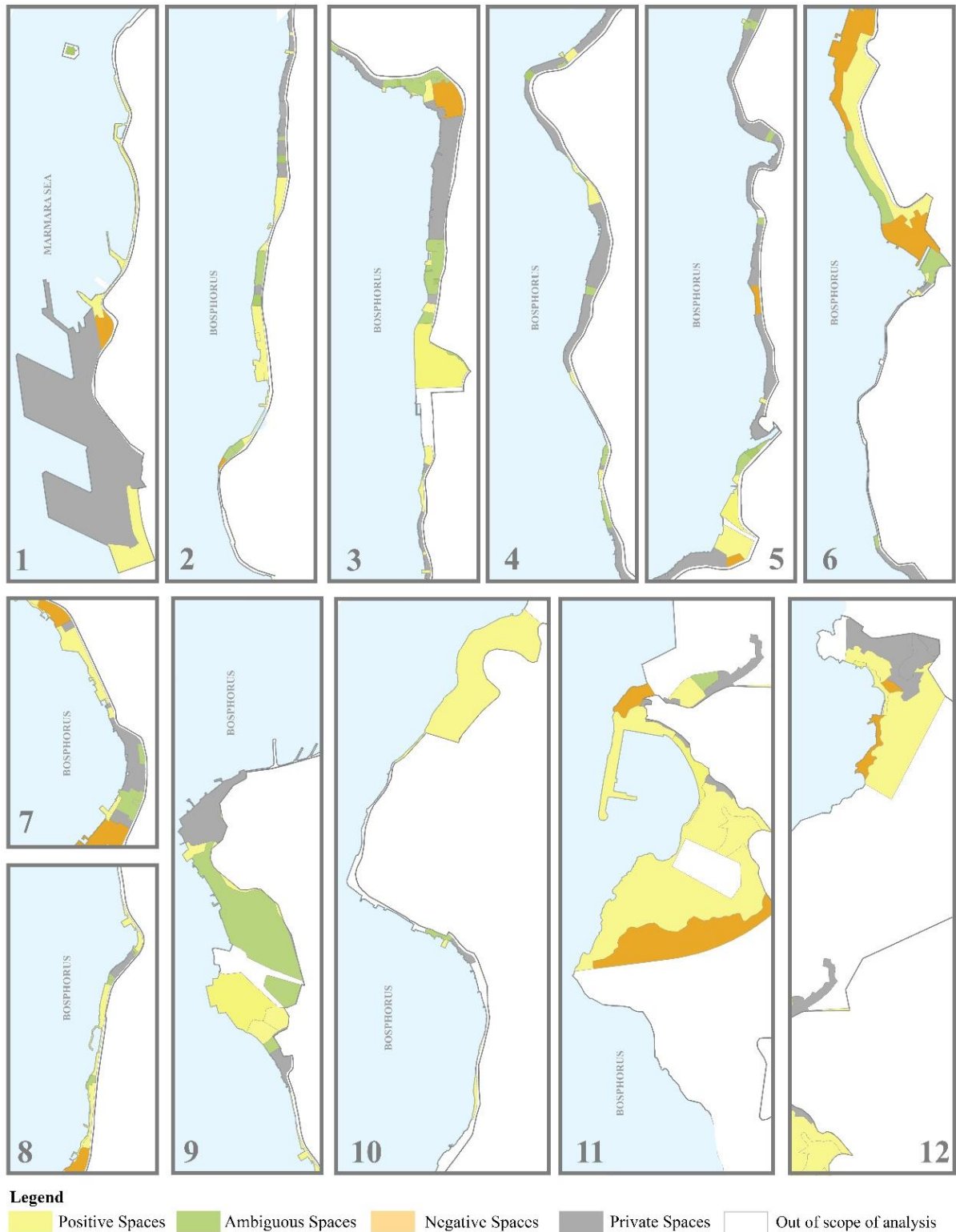
Figure 6. The mapping for classification of public spaces on Anatolian Side the Bosporus coastal line (The maps organized by the authors).

European Side of Bosphorus

Anatolian Side of Bosphorus

Legend

- Positive Spaces
- Ambiguous Spaces
- Negative Spaces
- Private Spaces
- Out of scope of analysis
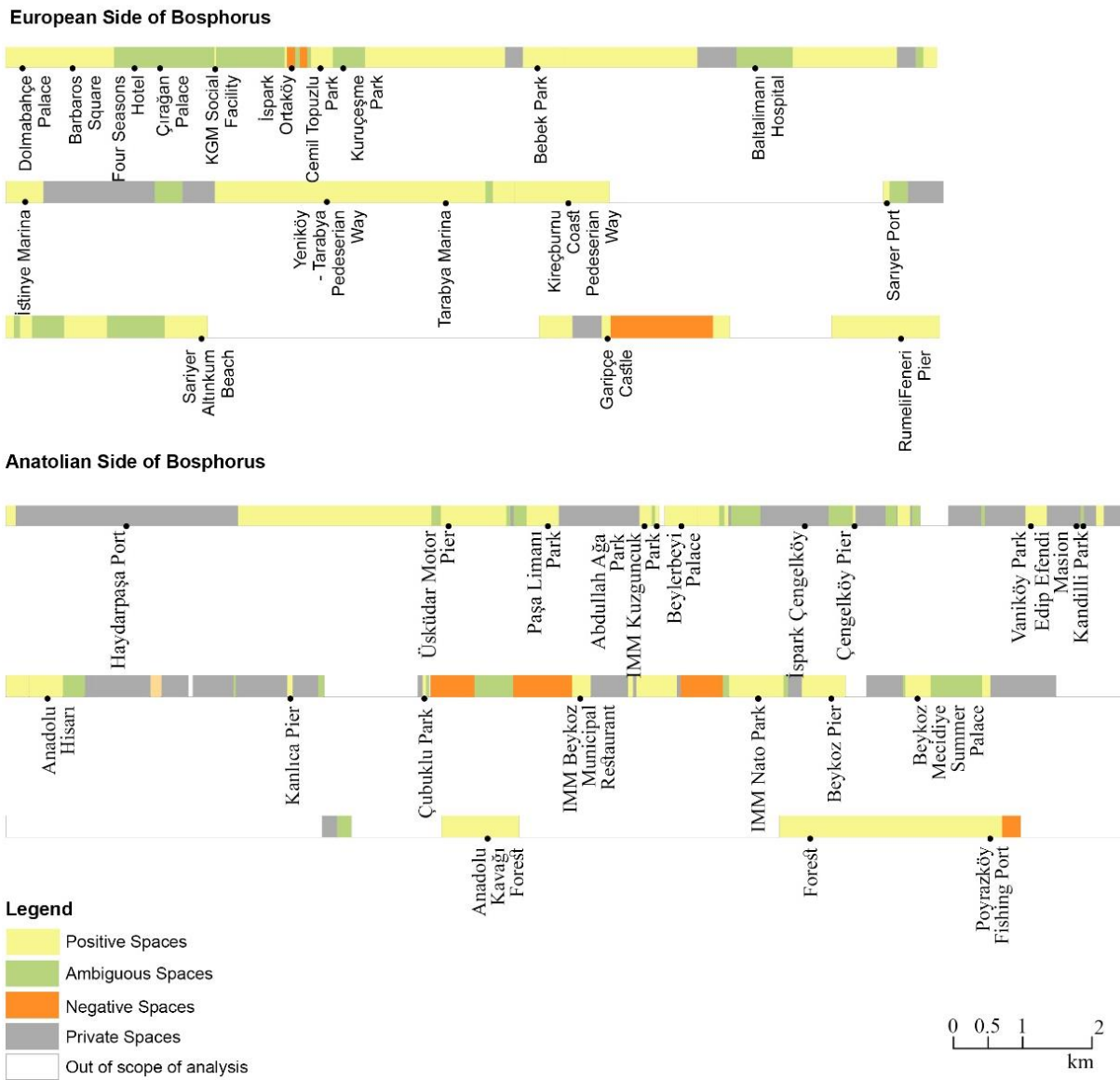
0   0.5   1   2
km

Figure 7. The diagram for results of the analysis (The maps organized by the authors).
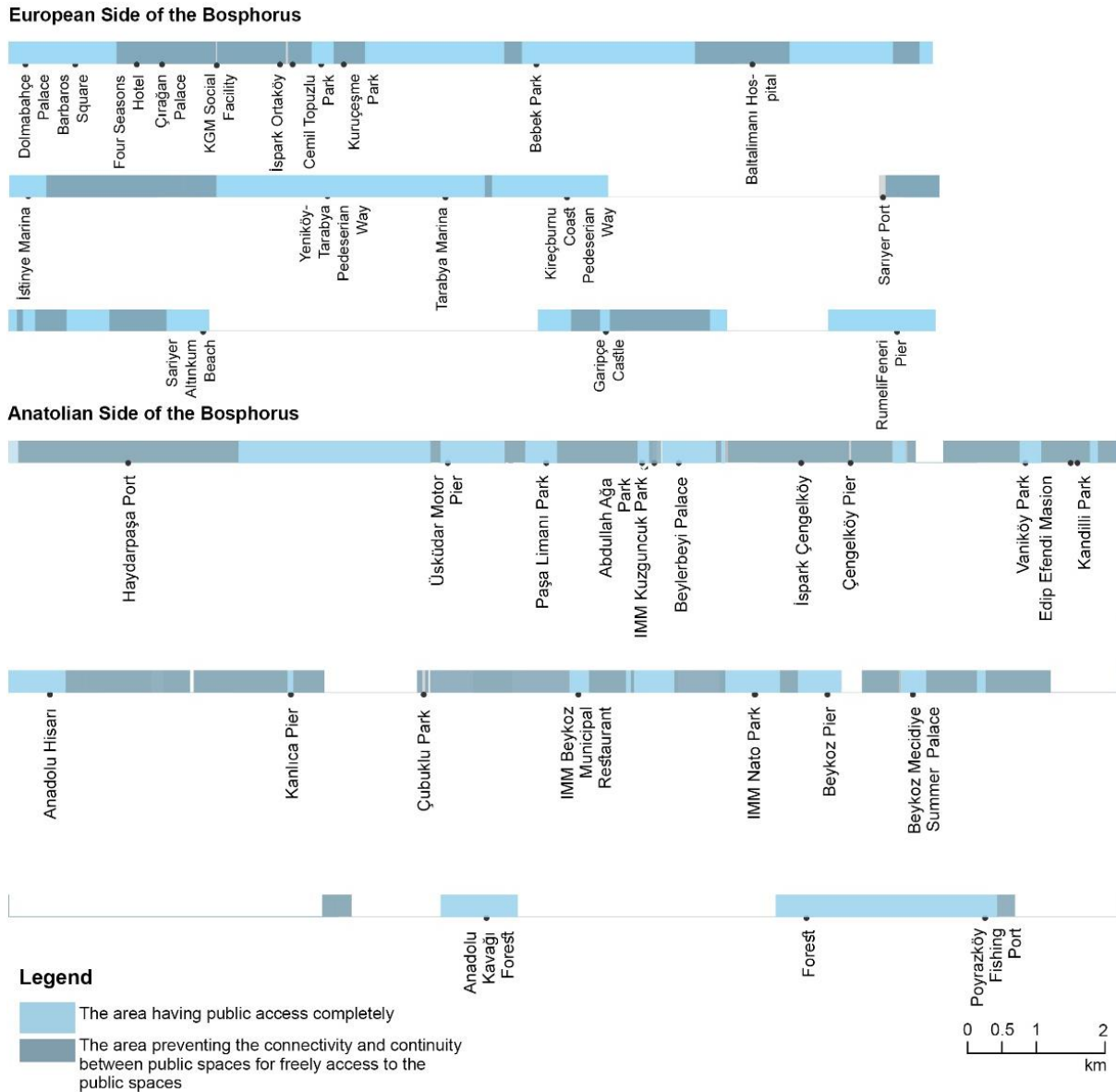
Figure 8. The diagram for results of the analysis in terms of public access (The maps organized by the authors).

The diagrams present public accessibility based on similarities or differentiations in activity and land use types on the coastlines. The accessibility evaluation by the knowledge extracted method supports planning and urban design decisions in terms of publicness on waterfront areas (Figure 8).

Conclusion

Waterfront areas are considered significant public spaces due to their contribution to the sense of place and belonging for citizens, as well as their connection between the city and the sea. Additionally, waterfront areas fulfil transportation and recreational needs for cities and citizens. The purpose of this study is to explore the complexity of publicness in the Bosphorus coastal area, thereby contributing to demonstrating the spatial relationship between public spaces and waterfront areas based on publicness and public space classification. Istanbul Bosphorus

coastal area does not have completely public access in terms of continuity along the coastline and presenting obstacle areas preventing connectivity between public spaces freely access.

Coastal cities have developed over time because of ancient city patterns, the impact of industrialization, and the effects of the post-industrialization era, which led to a retreat from waterfronts. Istanbul's coastal areas have a history of diverse land uses, including harbors, summer palaces and their parks, forest areas, military areas for protection, housing areas known historical waterfront mansions, industrial areas, and the residential areas associated with them throughout history.

The European Side has more public space areas (as positive spaces and ambiguous spaces) than the Anatolian Side. The Anatolian Side has more private spaces compared to the European Side, primarily due to Haydarpaşa Harbor and residential areas such as "yalı." Moreover, old industrial areas like the Beykoz Paşabahçe Glass Factory, Tekel Factory, and Deri Kundura (Shoe Production) Factory were located in Beykoz, in the northern part of the Anatolian Side. Since these industrial facilities are situated on the waterfront, they act as obstacles between citizens and the coastal area.

While the distribution of positive spaces is similar on both sides, the ratio of ambiguous spaces differentiates the European Side from the Anatolian Side. Ambiguous spaces are listed as semi-public areas like urban facility area. Moreover, ambiguous spaces introduce complexity to public space typology due to the uncertainty surrounding their ownership and the degree to which considered public or non-public (Carmona, 2010b). For example, educational areas are considered ambiguous spaces as they are publicly owned, but their function and usage are determined by users. Spatial analysis demonstrates that the rate of ambiguous spaces increases as one approaches the city center, such as Beşiktaş, which boasts a variety of public spaces.

The land property, multi-layered historical characteristics, non-comprehensive planning decisions, and transportation necessities lead to complexity in public spaces. Although there are a variety of types of public spaces, approximately half of the Bosphorus coastal area comprises positive spaces. Also, more than half of the coastal area is accessible to the public as positive and ambiguous spaces.

The waterfront areas have diverse dynamic characteristics like recreation, transportation and commercial hence, the areas are important part of the coastal cities that improving urban identity by strengthen relationship between citizens and the city. The study contributes to classify public spaces and accessibility analysis on coastal area based on activity and land uses characteristics in the waterfront areas for comprehensive urban planning for urban planners and urban designers. Further, the comprehensive classification supports developing efficacious strategies on the planning process for public access to the waterfront by defining the area providing the continuity public access, the area preventing this continuity and connectivity between public spaces throughout the coastal areas. The further works can improve public spaces classification on basis connectivity and continuity between public spaces on waterfront for urban design and planning strategies.

References

Akkar, M. (2005a). The changing 'publicness' of contemporary public spaces: a case study of the Grey's Monument Area, Newcastle upon Tyne. *Urban Design International*, 10, 95–113.

Akkar, Z. M. (2005b). Questioning the 'publicness' of public spaces in postindustrial cities. *Traditional Dwellings and Settlements Review,* 16, 75–91.

Al-Hagla, K. S. (2008). Towards a sustainable neighborhood: the role of open spaces. *International Journal of Architectural Research Archnet-IJAR, 2*(2), 162-177, DOI: 10.26687/archnet-ijar.v2i2.239

Banerjee, T. (2001*). The future of public space: beyond invented streets and reinvented places. Journal of the American Planning Association*, *67*(1), 9-24, DOI: 10.1080/01944360108976352

Carmona, M. (2010a). Contemporary public space: critique and classification, part one: critique. *Journal of Urban Design*, *15*(1), 123-148, DOI: 10.1080/13574800903435651

Carmona, M. (2010b). Contemporary public space, part two: classification. *Journal of Urban Design*, *15*(2), 157-173, DOI: 10.1080/13574801003638111

Carmona, M. (2015). Re-theorizing Contemporary Public Space*. Journal of Urbanism. 8*(4): 373–405. DOI: 10.1080/17549175.2014.909518

Carmona, M. & Wunderlich, F.M. (2012). *Capital Spaces: The Multiple Complex Public Spaces of a Global City.* London: Routledge.

Carr, S., Francis, M., Rivlin, L. G. & Stone, A. M. (1992). *Public Space.* Cambridge: Cambridge University Press.

Dines, N., Cattell, V., Gesler, W. & Curtis, S. (2006) *Public Spaces, Social Relations and Well-being in East London.* Bristol: The Policy Press.

Dovey, K. & Pafka, E. (2020). Mapping the publicness of public space, An access/control typology. In Mehta, V. & Palazzo, D. (Eds.), *Companion to Public Space* (1st ed., pp.234-248). *Routledge*. https://doi.org/10.4324/9781351002189

Ercan, M. A. & Memlük N. O. (2015). More inclusive than before?: The tale of a historic urban park in Ankara, Turkey. *Urban Design International*, *20*(3), 195-221. DOI:10.1057/udi.2015.5

Gehl, J. & Gemozoe, L. (2001). *New City Spaces.* Copenhagen: The Danish Architectural Press.

Hoyle, B. S. (1998). *Cities and Ports: Concepts and Issues.* Vegueta, 263-278.

Istanbul Planning Agency (2020). *Istanbul Spatial Analysis Report for Vision 2050*.

Ian, I.Y., Yung, E.H., Luo, M. J., Chan, E.H. & Chen, W.Z. (2020). A typological study of public open space in private developments in Hong Kong. *56th ISOCARP World Planning Congress in Doha, Qatar International Society of City and Regional Planner*.

Kohn, M. (2004). *Brave New Neighbourhoods: The Privatization of Public Space.* New York: Routledge.

Koramaz, K. E. & Turkoglu, H. (2014). İstanbul'da kentsel yeşil alan kullanimi ve kentsel yeşil alanlardan memnuniyet. *Planlama.* 24(1), 26-34. DOI: 10.5505/planlama.2014.03511

Langstraat F. & Van Melik R. (2013). Challenging the 'End of Public Space': A Comparative Analysis of Publicness in British and Dutch Urban Spaces. *Journal of Urban Design*, *18*(3), 429-448, DOI: 10.1080/13574809.2013.800451

Leclercq, E. & Pojani, D. (2023). Public space privatisation: are users concerned? *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, *16*(1), 1-18, doi: 10.1080/17549175.2021.1933572

Leclercq, E., Pojani, D. & Van Bueren, E. (2020). Is public space privatisation always bad for the public? mixed evidence from the United Kingdom. *Cities,* 100, 102649. doi: 10.1016/j.cities.2020.102649

Lynch, K. (1960). *The Image of the City*. Massachusetts: MIT Press.

Madanipour, A. (2003). *Public and Private Spaces of the City*. London: Routledge.

Malone, K. (2002) Street life: youth, culture and competing uses of public space. *Environment and Urbanization,* 14(2), 157–168.

Mantey, D. (2017*).* The 'publicness' of suburban gathering places: The example of Podkowa Leśna (Warsaw urban region, Poland). *Cities*, 60(2017), 1-12.

Mantey, D. & Kępkowicz, A. (2018). Types of public spaces: the polish contribution to the discussion of suburban public space. *The Professional Geographer*, 70(4), 633-654, DOI: 10.1080/00330124.2018.1443475

Mehta, V. (2014). Evaluating Public Space. *Journal of Urban Design*, 19:1, 53-88, DOI: 10.1080/13574809.2013.854698

Nemeth, J. & Schmidt, S. (2011). The privatization of public space: modeling and measuring publicness. *Environment and Planning B: Planning and Design*, 38, 5-23. DOI:10.1068/b36057

Ozkan, O. (2017). Culture of coastal city – change of city culture with re-created border: example Maltepe coastline. *Mimar.ist 59*(2), 46-51.

Sarıbıyık, F. (2022). Evaluation of public open spaces on urban waterfronts: the case of marmara waterfronts - Istanbul (Master Thesis). Istanbul Technical University.

Sandalack, B. A. & F. A. Uribe. 2010. Open space typology as a framework for design of the public realm. In *The faces of urbanized space architectural volumes*, ed. R. Barelkowski, 47–86. Poznan, Poland: Exemplum.

Seçmen, S. & Turkoglu, H. (2022). An approach for the evaluation of the spatial quality of urban waterfronts: the case of Istanbul. *The International Journal of Design in Society, 16*(1), 91-111. https://doi.org/10.18848/2325-1328/CGP/v16i01/91-111

Sennett, R. (1992). *The Fall of Public Man*. New York: W.W.Norton.

Sibley, D. (1995). *Geographies of Exclusion.* London: Routledge

Sorkin, M. (1992). *Variations on a Theme Park: The New American City and the End of Public Space*. New York: Hill and Wang.

Stanley, B. W., Stark, B. L., Johnston, K. L. & Smith, M. E. (2012). Urban Open Spaces in Historical Perspective: A Transdisciplinary Typology and Analysis. *Urban Geography,* 33(8), 1089-1117, DOI: 10.2747/0272-3638.33.8.1089

Timur, U. P. (2013). Urban waterfront regenerations. M. Özyavuz (Eds.), *Advances in Landscape Architecture* (pp. 169-206). IntechOpen.

Thomas, M. (1991). The Demise of Public Space. In V. Nadin, and J. Doak (Eds.), *Town Planning Responses to City Change* (pp. 209– 224). Avebury: Aldershot.

Türkoğlu, H. & Seçmen S. (2019). The role of urban waterfront parks on quality of life in İstanbul., *ITU A|Z Journal, 16*(1) 53-66.

Zukin, S. (1995). *The Cultures of Cities*. Cambridge, MA: Blackwell.

Varna, G., & Tiesdell S. (2010). *Assessing the publicness of public space: the star model of publicness.* Journal of Urban Design *15* (4): 575–598. DOI: 10.1080/13574809.2010.502350

Yazgan, A. & Sel, D. B. (2014). *Integrated coastal zone management - Cultural heritage: Istanbul coastal areas.* 8th Symposium of Waterfront Engineering *(*pp. 125-137). Union Of Chambers Of Turkish Engineers And Architects, Chamber of Civil Engineer, Istanbul.

Yenen, Z., Enlil, Z. Ş., & Ünal, Y., (2016). *İstanbul a city of waterfronts or a city inland. Waterfronts: A New Frontier for Cities on Water*. (pp. 116-123). Venice, Italy.

Research Article

A MONOGRAPH ON SPACE: KAHN ARCHITECTURE AND TURRELL INSTALLATION

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Abstract The way design disciplines and art look at space in terms of their reasonings and their perceptions shows similarities and differences between past and present. This is also true for architecture, that creates space, and installation art, that presents spatial narratives. In the readings, no study was found in which the concept of space was monographically handled in the context of its relationship with architecture and installation art and examined in depth with case analysis. From this point of view, the hypothesis that the multidimensionality of space can be read through the architecture of Louis Kahn and the installation of James Turrell was put forward and a monographic examination was carried out.

The study consists of determining the sample, research and analysis. The selection of the names in question was influenced by the fact that their ways of dealing with space can be read both through their own discourses and publications on their works, as well as the fact that they are award winners. Theses, scientific research papers, artistic criticism texts, book/book chapters, interviews and biography documentaries were used as research material. In the examinations made by content analysis, firstly, the concepts expressing the architect and artist's view of space were determined. Then, common and different concepts in both fields were ranked according to their frequency of use. Thus, representing Louis Kahn and James Turrell's approaches to space with the concepts frequently encountered in the literature and illustrating them has been adopted as the method of the study.

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Introduction

Many disciplines are closely related and mutually enrich each other. The discipline of architecture and installation art, through the medium of art, share a strong connection. Architecture is expressed as an art form that creates spaces facilitating the realization of actions with aesthetic and functional value, making life easier, and responding to the totality of requirements (Köse, 2016, pp. 50-51). The idea that art is an aesthetic phenomenon and architecture strives to create space within this phenomenon expresses commonalities in the relationship between art and architecture (Erzen, 1976, p. 182). In this context, it can be argued that artistic value is inherent in architecture and is one of the elements influencing the architectural value of a structure (Erbay, Zorlu, Akgül, Onur, & Aras, 2013, pp. 29-30). Architecture is also a form of expression; it carries a communicative function and possesses cultural significance (Hasol, 2017, p. 12). Architecture serves as a bridge in the transmission of the arts of cultures and civilizations (Uçar, 2011, p. 43).

Installation, which has become a significant part of contemporary art, is a mode of production, expression, and a philosophy of art (Taştan, 2018, p. 49). Among various art forms, installation art is the most potent in addressing and creating space, specific to a particular location, examining and utilizing the qualities of that space, and emphasizing interaction with the viewer (Yerce, 2007, p. 7). Through its experiential and questioning approach for the viewer, installation art brings together art and space, transcending its own boundaries and integrating with the given space (Taşkaya, 2022, pp. 10-11). Both the discipline of architecture and installation art, due to their structure and existential purpose, cannot be expressed independently of space; however, they use space and have the ability to create new spaces. In this context, it can be stated that installation art is associated with the discipline of architecture. Nevertheless, while the motivation for creating space in the discipline of architecture is based on human physical and psychological needs, in installation art, this motivation is related to emotional expression (Kaya & Sağsöz, 2022, p. 3). In installation art, like in architecture, the artwork creates a living space in a given area; however, the treated space, unlike architecture, generates a different visual impact on the viewer through placement in terms of meaning and expression (Yerce, 2007, p. 33). In summary, installation artworks themselves can define spaces where the viewer can immerse and move within.

At this point, the concept of space reveals the points at which the two fields converge and diverge. In other words, the space that shapes both the discipline of architecture and installation art encompasses similarities and differences in terms of their reasons for existence, perception, and utilization. Within this framework, it is believed that highlighting the unifying and differentiating features of the concept of space simultaneously in both the discipline of architecture and installation art contributes to the depth of studies in this area.

In line with this purpose, the study initially examines existing works on the concepts of space in architecture and art. For instance, Usta (2020, p. 25) has conducted a study discussing the concept of space, exploring its definitions from different perspectives, and opening a debate on the concepts of space and place. Demir (2019, p. 1) has focused on the phenomenon of

space, examining its connections with installation art and the interior spaces they construct from a design perspective, aiming to identify the characteristics that define installation art. Üngür (2011, p. 2) has sought to map the thoughts produced and debated throughout history in various fields such as physics, philosophy, social sciences, and aesthetics related to the concept of space within the scope of the discipline of architecture.

Numerous studies also address the combination of art and space. Toluyağ (2020, p. 101) analyzes the relationships between installation practices and exhibition spaces from a spatial perspective through object analyses. In another study, the works of Do Ho Suh are examined, and the representations of space in these works are analyzed, questioning the impact created by the absence of space (Balaban & Varol, 2022, p. 499). Despite these readings, no study has been found that investigates the relationship between the concept of space and the disciplines of architecture and installation art through case analysis, hence the aim of this study is to contribute to filling this gap in the literature.

In this study, the relationships between the discipline of architecture and installation art with space are mutually questioned, and they are evaluated in relation to each other. This approach also points to the originality of the research. With such a perspective, the hypothesis is put forward that the multidimensional nature of the concept of space can have different reflections, and it can be read through a case study of Louis Kahn's architecture and James Turrell's installation. In summary, the study aims to reveal the similarities and differences in the perspectives of installation art and the discipline of architecture regarding space.

Methodology

The study consists of determining the sample and the steps of research and analysis. In this context, the approaches of the selected designer and artist towards the space have been examined through written and visual sources.

In the conducted study, which employed the inductive method, qualitative research methods were utilized. The preference for the inductive method in the study is primarily due to the significance of having the relationships identified in research methods supported by certain events. Although the study has a descriptive characteristic in terms of causality, it has an analytical research quality in terms of its purpose. Analytical research primarily aims to present a new perspective or suggestion on a subject (Seyidoğlu, 2020, p. 39).

In the study, the concept of space, common in both the discipline of architecture and installation art, is examined through a selected sample group to understand its interpretation in these fields. Subsequently, the perspectives of the chosen designer and artist, representing their respective fields, are compared regarding their approach to space. Within this framework, the similarities and differences in the understanding of space in the works of Louis Kahn and James Turrell are key questions addressed in the research.

The selection of the mentioned figures was influenced by various reasons during the process. The ability to interpret their approaches to space through their own discourses and publications about their works was a fundamental factor in choosing these names. Additionally, the dimension, significance, and differentiation of the relationship that Kahn and Turrell establish

with space from others played a role in this selection. Kahn, perceiving architecture as an art and approaching space emotionally, intuitively, and philosophically, contrasts with Turrell's similar emotional, philosophical, and perceptual questioning of space, distinguishing the two figures in their approach to space (Bilir, 2019, pp. 50-51; Mulla, 2019, pp. 8-9; URL 2). Their distinctive characteristics contribute to providing broader and more original perspectives on space in the monographic study, thus enhancing the research. Furthermore, the abundance of sources about them, their established presence in the literature, and their numerous awards in their respective fields are additional factors considered in the selection process.

With this perspective, the selection of Louis Kahn for the discipline of design is influenced by several factors. Kahn's selection is based on the abundance of biographical documentaries, such as *"My Architect: A Son's Journey"* and numerous awards, including the AIA Gold Medal, Royal Gold Medal, and Twenty-Five Year Award (URL 1, URL 2). The extensive body of work about him, including publications, conferences, articles, and critical essays, is also a decisive factor in this decision. The exhibition "A New/Second Look at Louis Kahn: Photographs - Drawings and Paintings by Cemal Emden (2017-2018)" highlights Kahn's importance as a key figure in 20th-century global architecture, recognizing him as a thinker, artist, and "architecture guru," focusing on his significant structures and artistic works (URL 3). Additionally, Kahn's prominence in 20th-century architecture, inspiring contemporary architects like Tadao Ando, Moshe Safdie, Mario Botta, Renzo Piano, and Norman Foster, as well as the publication of his book "Louis Kahn: Silence and Light" contribute to his selection (Rabifard, 2011, p. 161).

In the realm of art, the selection of James Turrell is influenced by various factors. Turrell is acknowledged in the book "Arts of Wonder" as one of the most exciting artists working at the end of the 20th century and the beginning of the 21st century, as recognized by many art enthusiasts and critics (Zöngür & Uluçay, 2020, p. 3934). The existence of published books, articles, and papers about him also played a role. Turrell's numerous art pieces, interviews, and the availability of information from internet sources are additional factors in this decision. Furthermore, Turrell's receipt of the National Medal of Arts (URL 4) and his diverse educational background in mathematics, perceptual psychology, and astronomy (Atalay & Baba, 2021, p. 907; Daşkesen, 2022, p. 98) suggest a strong foundation supporting his artistic production, contributing to his selection.

In the research process of the study, the data collection method involved document analysis through various literature sources, including books, articles, papers, biographies, interviews, and internet sources written by individuals or institutions on the subject. Visual analyses of the works of the selected designer and artist, constituting the sample group, were also part of the document analysis. In this context, the perspectives on space and approaches to space by these figures were examined by creating a sample from literature sources, and content analyses were conducted based on these sources.

The research utilized purposive sampling methods within the document analysis, as the aim was to obtain the best information related to the research problem (Creswell, 2021, p. 149). Maximum diversity sampling, a purposive sampling method, was specifically chosen to ensure a variety of perspectives rather than aiming for generalization. This sampling method allows

for the analysis of situations that are thought to contain rich information, often referred to as purposeful or criterion sampling (Goetz & LeCompte, 1984; as cited in Yıldırım & Şimşek, 2008, p. 107).

In the analysis phase of the study, a rich source of information compiled through purposive sampling was used to elucidate the design philosophies of Louis Kahn and James Turrell. The sources included theses, scientific research papers, art critique texts, books/book chapters, interviews, conferences, and biographical documentaries. In total, 58 different sources were examined during the process, and the analyses were completed where data redundancy occurred. Among these, 2 papers, 8 articles, 8 theses, 5 internet sources, 3 documentaries, 1 conference, and 1 interview were included in the analysis. The data were initially coded from the texts based on the nature of content analysis, identifying recurring concepts in expressing the architect and artist's perspectives on space. These concepts were then ranked according to their frequency. The identified concepts expressing similarities and differences were classified as 1st-degree and 2nd-degree, respectively (Figure 1). The design philosophies and perspectives on space of the architect and artist were first explained through 1st-degree similarities, supported by visuals. Examples were selected by considering their frequent association with the discussed concepts in the literature. Subsequently, the design and spatial perspectives of Kahn and Turrell were examined through 1st-degree differences.

In summary, the study consists of "Preparation" and "Review" processes. In the Preparation process, a literature review was conducted, and sources were compiled. The Examination process involved scrutinizing the perspectives on space of the selected individuals through purposeful sampling and the maximum diversity sampling suggestion, using the identified sources and selected works (Table 1).

Table 1. Stages of the Study.

Preparation Process		Review Process			
• Identification of Research Question and Formulation of Hypothesis	• Literature Review • Selection of Figures Representing the Discipline of Architecture and Installation Art • Purposeful Sampling and Maximum Diversity Sampling in Source Selection	• Identification of Concepts Expressed in the Literature through Document Analysis • Identification of Prominent Concepts in the Works of Louis Kahn and James Turrell • Identification and Hierarchization of Similarities and Differences	• Inference Based on Identified Fundamental Concepts • Illustration of Works Demonstrating the Representational Capability of First-Degree Similarities	• Expression of the Spatial Concept through the Perspectives and Design Philosophies of Kahn and Turrell	
Introduction	Research	Analysis	Findings and Discussion	Conclusion	
Exploration of the Concept of Space in the Discipline of Architecture and Installation Art	Gathering Information on the Design Philosophies and Perspectives on Space of Kahn and Turrell	Determining Concepts Expressing Kahn and Turrell's Design Philosophies and Perspectives on Space, Addressing Fundamental Similarities and Differences	Discussing First-Degree Similarities and Differences Within the Considered Concepts	Expression of the Spatial Concept's Position in Various Disciplines	

Findings and Discussion

The General Characteristics of Louis Kahn's Architecture and James Turrell's Installations

According to Kahn, who considers architecture as a spatial art, a space should possess a philosophy that resonates with the human spirit and existence. When a structure is built, it simultaneously establishes a way of life. Kahn emphasizes that the life instilled in his structures interacts with people; therefore, approaching a space merely functionally would deprive it of being a living space. In other words, space should engage with its users, and for this to happen, it requires more than just functionality. Kahn ensures the longevity of his structures through this approach; to him, the existence of a structure is not only physical but also spiritual (Kahn, 1965, as cited in Ertem, 2010, p. 10; Yıldız, 2020, p. 54).

On the other hand, Turrell views space as a form of expression and aims to provide viewers with new experiences. His approach transforms space into a work that is not only observed but lived and experienced, making the relationship between space and art perceptible as a whole to the viewer. In his works, the viewer becomes not only an observer but also a resident, spending time and experiencing the artwork (Zöngür & Uluçay, 2020, p. 3933). Thus, Turrell demonstrates a different living space and lifestyle beyond conventional ideas. Inspired by colors from nature, he creates his works with a minimalistic approach, using singular colors, and alters the viewer's perception through artistic/mathematical constructs (Poroy, 2014, p. 221).

Various factors contribute to the formation of the general characteristics of Kahn's architecture and Turrell's installations. Kahn, who comes from a Jewish family, was influenced by the environment in which he grew up, with traces of migration and belief evident in his works. Furthermore, his architecture draws inspiration from historical structures he encountered during his travels, incorporating classical architecture and emphasizing concepts such as geometry, material, order, and monumentality. While his early works were designed in a traditional style, over time he redefined his works in terms of light, form, and spatial usage, incorporating modern construction methods into the process (Bilir, 2019, p. 49; URL 5).

As an artist creating abstract experiences, Turrell relies on scientific calculations in his works, simultaneously creating illusion effects and questioning perception. In this process, he draws on various disciplines in his installations. Turrell's interdisciplinary background in his educational journey is effective in his approach to the viewer, space, and their relationship within this framework. Turrell introduces contemporary art with his works, presenting new perspectives by abstracting them from time and space. Consequently, his works are filled with uncertainties for the viewer. In doing so, he produces works that involve the perception of the existence of non-existent mass through the senses (Poroy, 2014, pp. 215-216). The experiential domains in his works are shaped through perception. In this context, in Turrell's installations, it can be inferred that he is influenced by the works of French philosopher Maurice Merleau-Ponty. Indeed, the concept of perception that Turrell questions in his works, along with the uncertainty of experience and time, is also a central theme in Ponty's works. According

to Ponty, humans connect with the world through their bodies and perceive it. Therefore, sensation is a state of coexistence. Turrell directs the viewer towards this experience of coexistence in his installations that are entered and experienced. In many interviews, the artist mentions creating a wordless thought experience with his works, guiding the viewer to the essence through the entered installations. Additionally, Turrell has a series of works inspired by the optical phenomenon known as the Ganzfeld effect. His studies on this phenomenon have formed the basis of his works. Turrell has also used the term Ganzfeld Effect as the name for his series of works (Ertung, 2022, pp. 1331-1333).

When examining academic studies related to Kahn and Turrell, it can be observed that their design philosophies are expressed through various concepts. In Kahn's case, these expressions primarily include light, geometry, material, symmetry, time/timelessness, monumentality/permanence, silence, integrity, part-whole relationship, fullness-emptiness, spirituality, and proportion (Akkaya, 2017, p. 218; Rabifard, 2011, pp. 86-87; Yıldız, 2020, p. 61). Kahn, in designing his structures, utilized geometry as a tool to shape central forms in space. Additionally, he used geometry, material, light, and elements of nature to provide semantic impact to the space, defining the form of the space (Ersal, 2013, p. 109). Although the geometric shaping of the interior space, spatial organization, functionality, and identity are determinative in Kahn's structures, this condition is expressed through an arrangement where monumentality and permanence are also influential (Yıldız, 2020, p. 70). According to Kahn, space becomes visible by emerging from silence through expression.

In Turrell's structures, which convey the relationship between space and art as a whole to the viewer, the prominent concepts include light, color, spirituality, material, geometry, engineering, science, mathematics, fullness-emptiness, interaction, psychology, and perception (Ertung, 2022, pp. 1331-1333; Poroy, 2014, p. 221; Zöngür & Uluçay, 2020, p. 3940). In his works, the viewer becomes not only an observer but also a resident, spending time and experiencing the artwork. The artist introduces new experiences through the intersection of art, science, and design, bringing a fresh perspective to installation art. Additionally, Turrell allows the viewer to reexperience the space through his expressive form (Zöngür & Uluçay, 2020, p. 3933).

When examining the design philosophies of Louis Kahn and James Turrell through the literature, it is evident that they converge on certain concepts while diverging on different focal points (Figure 1). From this perspective, especially the concepts of light, geometry, and material emerge as strong shared perspectives. By delving into their views on space through these three common concepts, findings have been reached.
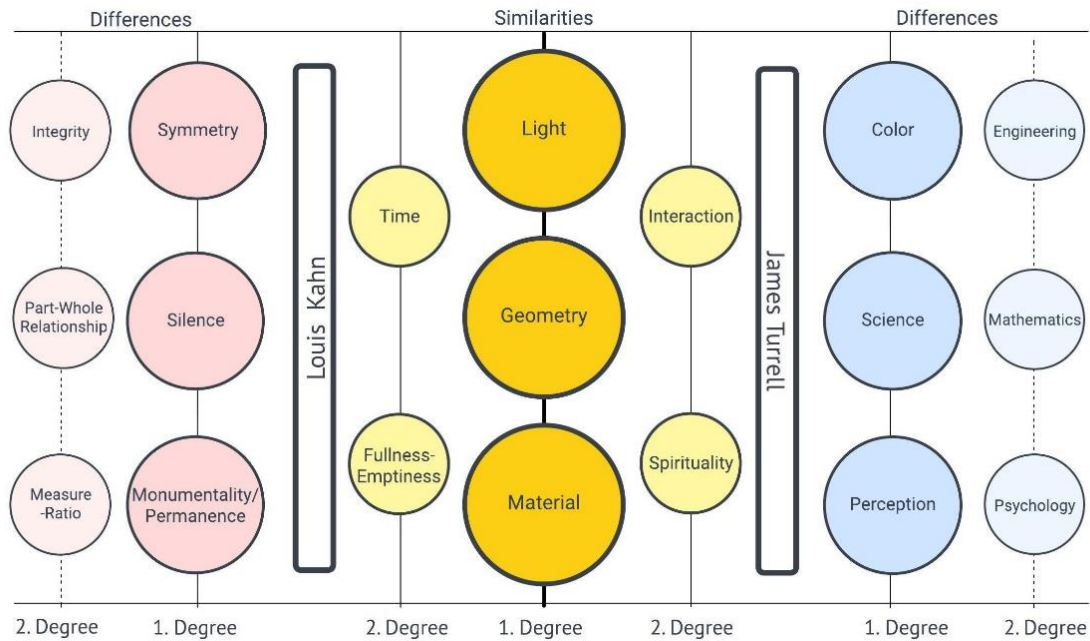
Figure 1. Conceptual Relationships in the Design Philosophies of Louis Kahn and James Turrell.

Readings of Space through the Concept of Light

The concept and utilization of light constitute common and prominent elements in the perspectives of space in Kahn's architecture and Turrell's installations. It is effectively employed in creating spatial perception and interpreting the meaning of space, often overshadowing other elements. This situation can be attributed to the fundamental necessity of light in the visual perception of space.

Examining the ways in which the concept of light is utilized, it can be asserted that Kahn is one of the significant architects who effectively employs light in space. He shapes space by integrating architecture and engineering with light in his works. According to Kahn, the most crucial factor in the formation of a space is natural light. He believes that the changing nature of daylight throughout the day, months, and seasons causes the building to undergo a transformation. Therefore, he avoids the use of artificial light in his works to prevent a single time period from being permanent. Kahn's approach stems from his desire to emphasize the relationship between the structure and its surroundings (Ersal, 2013, p. 105).

In Turrell's works, the manner in which light and darkness are employed constitutes one of the most important elements. Turrell views both artificial and natural light as tools for questioning space and time, creating experiences that challenge perception (Daşkesen, 2022, p. 96; Poroy, 2014, p. 216; URL 6; URL 7). His work titled "Wedgework" serves as an example of this approach (Table 2). In this piece, Turrell reshapes the space by creating a virtual wall effect using projection lights (Altunok, 2019, p. 60). The artist, who addresses the perception and aesthetics of light in the space, influences viewers' visual perceptions. In this process, he creates form through light transitions and the intensity of light (Daşkesen, 2022, p. 103).

Table 2. Wedgework, J. Turrell (URL 8, URL 9).
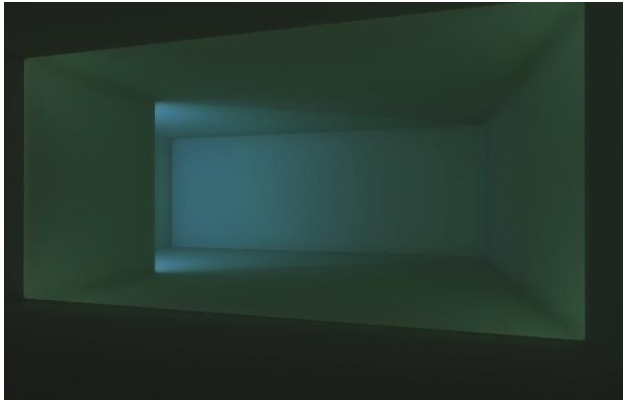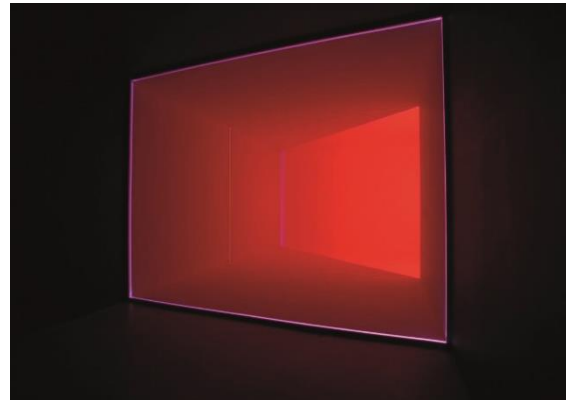
| Wedgework 3 (URL 8) | Wedgework 5 (URL 9) |

When examining Kahn and Turrell's methods of using light, it is observed that Kahn employs light not directly but by circulating it within the structure as beams of light or through clear geometric voids. This approach is an expression of his consideration of designs in conjunction with natural light (Yıldız, 2020, p. 13). Kahn's architecture encompasses social, emotional, and spiritual dimensions. Therefore, light, beyond being a mere illuminating element, adds meaning to space in various forms, such as beams, bright or faint, (Table 3). While light reorganizes space by dividing it, it also consolidates spaces into a single volume as an organizer. The light in the space enhances its quality and highlights material-specific differences. Kahn carefully executed material placement with attention to ensuring that each element is displayed under light without concealment (Kayaduran & Gürdağ, 2022, p. 256). Indeed, in Kahn's philosophy, the prominence of space is as crucial as that of light (Akkaya, 2017, p. 215).

Table 3. First Unitarian Church of Rochester, L. Kahn (URL 10, URL 11).
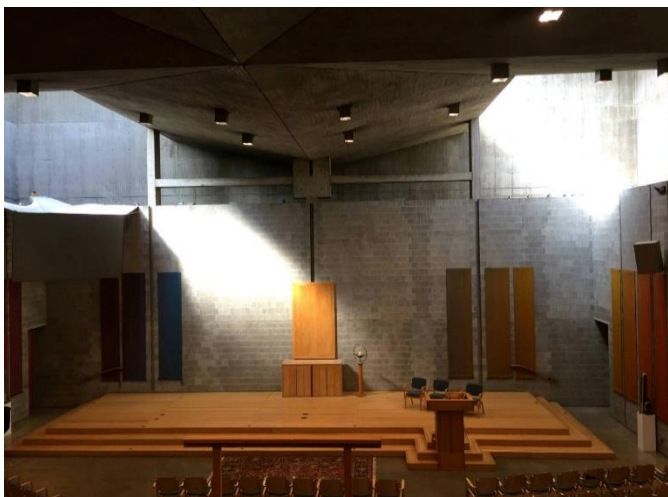
| First Unitarian Church of Rochester, A View from the Apse Area (URL 10) | First Unitarian Church of Rochester, View from a Place of Worship (URL 11) |

In his works, Turrell utilizes light to create transparency by taking advantage of the openings he creates, ensuring clear perception of objects (Kosky, 2013, p. 44). Consequently, he explores the space, transforming architectural elements, space, and void by associating them with light (Ertung, 2022, p. 1331). As an additional design element in his works, the artist reflects and uses color through light. Through light, the color present in the space transcends its two-dimensional nature and gains volumetric significance (Ertung, 2022, p. 1335) (Table 4, Table 8).

Table 4. Afrum (White) ve Virga, J. Turrell (URL 12, URL 13).

| Afrum (White) (URL 12) | Virga (URL 13) |

In defining the relationship between light and space in the works of the architect and artist, certain concepts come to the forefront. In Kahn's structures, this relationship is observed through material, space organization, time, nature, and spirituality. On the other hand, in Turrell's works, it is perceived through nature and spirituality, as well as color and form. Examples of Kahn's usage include the Kimbell Art Museum, the Salk Institute, the Exeter Library, the Yale University Art Gallery, and the First Unitarian Church. Among these structures, the Kimbell Art Museum stands out as the one where Kahn most effectively utilizes light. This building is composed of repeated vaults organized in the space, with the source of light and its effects achieved through the structure. The gaps formed between these vaults serve as light windows, allowing the perception of all possible effects of natural light throughout the day, year, and season inside. The atmospheres created within the interior at different times express the richness of light. Consequently, light forms envelopment, a sense of unity, and spirituality in the space. This richness is deciphered from various exhibition objects taking on the character of light, different colors felt in the space, and the brightness reflected on the vaults (Akkaya, 2017, p. 214) (Table 5).

Table 5. Kimbell Art Museum, L. Kahn (URL 14, URL 15).

| Kimbell Art Museum, A View from the Gallery Space (URL 14) | Kimbell Art Museum, A Different Perspective from the Gallery Space (URL 15) |

James Turrell's examples of light usage include the Roden Crater, Skyspace, and Ganzfeld series. Among these works, the one in which he most effectively uses light is the Roden Crater. The Roden Crater is an observatory where light, time, landscape, and spiritual experience are continuously observed with the naked eye (URL 16). According to Turrell, this work represents the pinnacle of his endeavors. In creating an environment for experiencing and contemplating light in his work, he also influences human visual and psychological perception. In Roden Crater, Turrell achieves this effect through tunnels and areas opening to the sky. He has shaped these areas to allow the observation of the sky, the sun, the moon, and the stars, thus creating spaces and constructing his work entirely from elements of nature (Poroy, 2014, p. 215). In this work, the integration of nature with light and color as an element of art has provided a new experience in terms of spatial design. Nature in the artwork not only houses the artistic creation but becomes an integral part of the piece (Zöngür & Uluçay, 2020, p. 3935) (Table 6).

Table 6. Roden Crater, J. Turrell (URL 16, URL 17, URL 18).

| Roden Crater Exterior View (URL 16) | Eastern Entrance of Roden Crater (URL 17) | Roden Crater Alpha (Eastern) Tunnel (URL 18) |

In the context of the selected sample, effective utilization of light is a design parameter in both the disciplines of architecture and installation art. Kahn and Turrell often incorporate natural light into their works; however, while Kahn avoids the use of artificial light, Turrell employs artificial light in his installations with great efficacy. This can be attributed to their frequent focus on indoor installations. Louis Kahn's insistence on using natural light stems from his refusal to perceive a space as devoid of light and his desire to emphasize the relationship between the structure and its surroundings. By employing natural light in a space, Kahn aims to highlight the perception of different times of the year, seasons, and various times of the day, while avoiding the imposition of a single time period dictated by artificial light. This approach seeks to narrate the flow of time and the world's changes through architecture (Ersal, 2013, p. 105). Throughout this process, it is observed that creating perception and understanding space through light are common goals for both Kahn and Turrell.
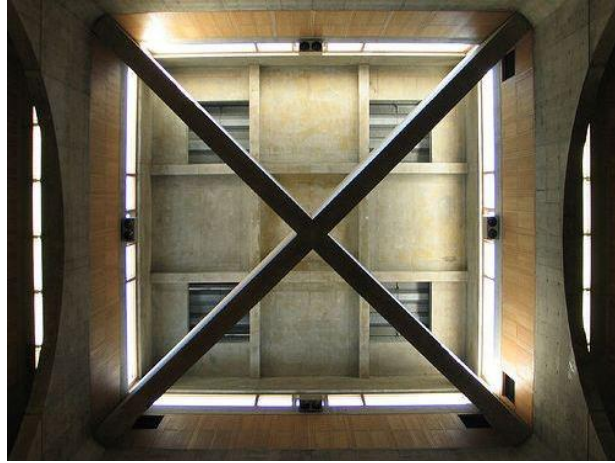
Readings of Space Through the Concept of Geometry

In both Kahn's architecture and Turrell's installations, "geometry" stands out as a common and predominant element in the way space is perceived. This element plays a significant role in the formal perception of space in both architectural discipline and installation art. In geometric organization, it is occasionally employed as a mass, sometimes as an object, and frequently as voids on surfaces. These voids serve to admit natural light and facilitate the planned distribution of volume within both Kahn's architecture and Turrell's installations.

Examining Kahn's use of geometry, it is observed that he often utilizes fundamental geometric shapes to create forms. In his structures, he expresses geometry as a tool defining the form of space and utilizes it to comprehend space, thereby ensuring a central shaping that encompasses main and ancillary figures (Ersal, 2013, p. 107) (Table 7). Examples illustrating this approach include the "National Assembly Building in Bangladesh," the "Kimbell Art Museum," and the "Exeter Library." In his structures, geometric forms such as squares and circles are juxtaposed to form a cohesive whole. The resulting simple geometric forms and abstract relationships in the floor plans are evident (Köseoğlu, 2017, p. 64). It can be argued that the inspiration behind Kahn's design approach stems from historical structures, such as the Egyptian Pyramids, constructed with pure geometry, carrying a meaning beyond the functionality of architecture (Bilir, 2019, p. 49).

Although in modern architecture, the use of pure geometry is often considered non-functional, Kahn demonstrated through his designs how geometric objects could be highly functional, imbuing them with emotional and imaginal significance. In this regard, Kahn's incorporation of basic geometric forms and his adherence to the principle of permanence can be considered among the most significant distinctions in both his structures and design philosophy (Yıldız, 2020, p. 18).

Table 7. Exeter Library, L. Kahn (URL 19, URL 20).
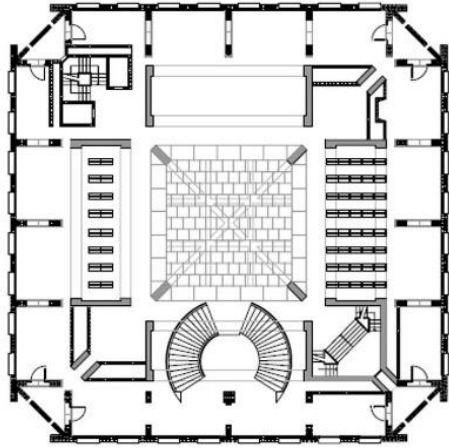
| Ground Floor Plan of Exeter Library (URL 19) | Ceiling View from the Interior of Exeter Library (URL 20) |

In Turrell's works, the use of geometry is devoid of symbolic meanings and directly relates to visual experience and perception. Examples of this usage include the "Projection," "Shallow," and "Skyspace" series. In the artist's creations, geometry is highlighted through openings in surfaces, forms placed within space, and the use of light. At this juncture, light also creates three-dimensional colored spaces. To achieve this, Turrell complements his exploration of geometry in space with fundamental geometric forms such as circles, triangles, rectangles, and squares, using colored lights on surfaces (Daşkesen, 2022, p. 101) (Table 8).

Moreover, by employing geometry within the space, the artist aims to create perceptual effects on the viewer. Turrell, driven by his curiosity for geometry and mathematics, distinguishes his works by reflecting light into a corner of an interior space, creating three-dimensional geometric forms in his piece named "Carn Green" from the "Projection" series. Similarly, in his "Shallow" series, the use of light in monochromatic and three-dimensional geometric forms within an interior space is evident.

Table 8. Gard Blue and Projection Series: Carn Green, J. Turrell (URL 21, URL 22).
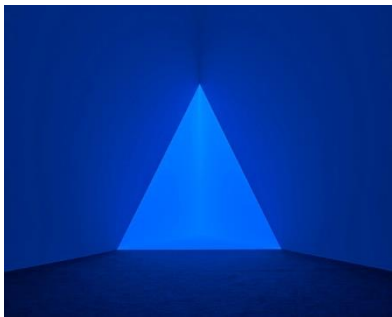
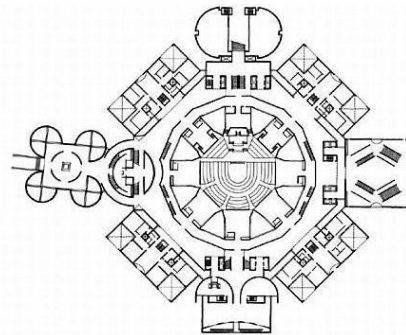| Gard Blue (URL 21) | Projection Series: Carn Green (URL 22) |

Kahn employs the concept of geometry in both the floor plans and the formation of form and structure in his buildings (Table 7, Table 9). Additionally, traces of mandala figures can be observed schematically in the portrayal of geometry in his structures. In his architecture, Kahn

formulates the order and formal concept through the geometric diagrams he creates. The National Assembly Building in Bangladesh is one of the works where this concept is prominently featured. The geometry of mandala figures determines the form of the structure. However, Kahn employs these figures not directly but by introducing irregularities, infusing dynamism into his buildings. In the design of the National Assembly Building, a symbolic monument for the Bangladeshi government, Kahn strategically incorporates natural light into the structure by introducing geometric voids on the facade, using it as an element shaping the form. By means of these geometric voids on the facade, he strengthens the impact of changing light throughout the day by allowing light to enter the space from different angles and varying intensities. Furthermore, these openings shaping the facade contribute to creating unity in architecture (Gast, 1998, as cited in Ersal, 2013, p. 109; URL 23) (Table 9).

Table 9. National Parliament House of Bangladesh, L. Kahn (URL 24, URL 25).

| Facade View of the National Parliament House of Bangladesh (URL 24) | Floor Plan of the National Parliament House of Bangladesh (URL 25) |

Turrell utilizes geometry as a method to create perception and emotion without symbolic meaning. This is exemplified in his series of works titled "Skyspace." Through geometrically shaped voids, he establishes a connection with the sky and allows natural light to diffuse into these voids. The forms opened in the ceiling evoke a sense of infinity and boundlessness in the space, influencing the viewer's perception accordingly. Turrell employs geometric shapes such as rectangles, circles, squares, and ovals for these voids in his works (Ertung, 2022, p. 1333; Poroy, 2014, p. 219).

Moreover, in contrast to the three-dimensional use of geometry in the "Projection" series, Turrell employs geometry in the second dimension as a geometrically shaped trace on the wall, as observed in his works (Altunok, 2019, p. 36). An example illustrating the diversity in Turrell's use of geometry can be found in his installation titled "Within Without" within the "Skyspace" series. This piece, featuring a pyramid form with a square base and colored inner walls, interacts with nature and offers the viewer a novel experience (Zöngür & Uluçay, 2020, p. 3938) (Table 10).

Table 10. Skyspace-Within Without, J. Turrell (URL 26, URL 27).

| Skyspace-Within Without Interior View (URL 26) | Skyspace-Within Without Exterior View (URL 27) |

When examining Kahn's approach to geometry in space, it is evident that he utilizes it in the layout and pursuit of form. Additionally, he employs basic geometric shapes such as squares, circles, and triangles to imbue emotional meaning into the space. In the structure, he aims to effectively use light by introducing geometric voids in facades, walls, and ceiling elements, thereby capturing it in different ways within the interior.

In contrast, Turrell employs geometry in space by creating voids in surfaces with geometric forms like circles and triangles. He incorporates natural light into his works in a manner similar to Kahn's structures. Furthermore, Turrell employs artificial light to create geometric forms within the space, adding a three-dimensional effect to these forms. He utilizes geometry in the space to alter the viewer's perception, particularly by opening voids in the ceiling in interior settings, thus evoking a sense of infinity.

Readings of Space Through the Concept of Material

The concept of "material" stands out as a common and prominent element in the perspectives on space in Kahn's architecture and Turrell's installations. When examined in terms of usage, it is particularly noteworthy how Louis Kahn conveys the intended meaning through the elements of his structures shaped, especially through materials (Ersal, 2013, p. 109). According to him, the manner in which the designer shapes the building elements through materials is crucial in conveying the intended meaning. The utilization of materials should allow for their innate qualities to be expressed without concealment, and exploring the potential of what materials can achieve becomes significant. In this regard, Kahn aims to discover what the material itself desires to be. Accordingly, he uses materials in harmony with the nature of the structure; concrete should remain as it is after the casting process, and steel should find its place in the structure without being polished. Kahn views construction techniques as tools in this context (Akkaya, 2017, p. 218). Simultaneously, it can be argued that he achieves the desired characteristics of "self-expression of space" and "permanence" in his structures through the impact of material usage (Yıldız, 2020, p. 65).

Turrell's approach to the use of materials emphasizes the perception he intends to create. Material selection and usage are determined in line with this objective, especially in large-scale installation works, achieved through an aesthetic understanding and the assistance of science

(Poroy, 2014, p. 216). For instance, Turrell actively utilizes the textures of materials with the aid of light for spatial perception. The combination of surface textures with the characteristics and colors of materials proves effective in perceiving space (Manav, 2011, p. 95). Moreover, Turrell considers the surrounding environment and nature as materials for his work. For example, the artwork "Within Without" from the "Skyspace" series is specifically designed for the surroundings of the National Gallery of Australia's garden (Table 10). Turrell integrates this artwork seamlessly into the garden as an integral part.

Analyzing Kahn and Turrell's approach to materials, Kahn's distinctive use of exposed concrete becomes apparent. The architect utilizes concrete in its raw form, akin to a mold, in his structures. This approach, evident in the details of material use, incorporates simplicity and basic geometry into the language of his structures (Wurman, 1986, as cited in Yıldız, 2020, p. 66). Kahn refrains from altering the texture of materials, leaving any imperfections that arise during construction untouched (Table 11, Table 13). This approach allows materials to unite without losing their inherent qualities, contributing to the overall coherence of the structure (Akkaya, 2017, p. 217). The unique atmosphere created in Kahn's spaces is a characteristic feature of his structures (Kayaduran & Gürdağ, 2022, p. 256).

Table 11. Yale University Art Gallery and Salk Institute for Biological Studies, L. Kahn (URL 28, URL 29).

| Interior View of Yale University Art Gallery (URL 28) | Facade Detail of the Salk Institute for Biological Studies (URL 29) |
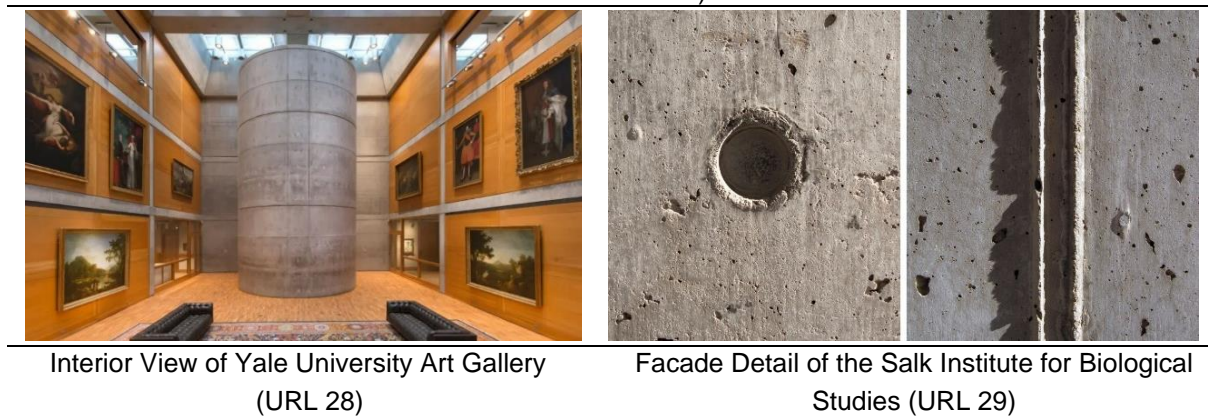
Turrell, on the other hand, generally prefers to use elements existing in space, such as light, color, and void, as materials. While shaping and utilizing materials in his works, he specifically defines light as an element that requires observation. Moreover, the use of building materials like concrete, stone, and plaster is emphasized because in his works, light meets the viewer not directly, but through space, surface, and material. Additionally, the element of water is sometimes a significant complementary feature in his works (Table 12). However, the use of water in his works is not merely limited to aesthetics; it also possesses functional qualities. Turrell highlights infinity in his works through the illuminated and colored water element (Ertung, 2022, p. 1333; Zöngür & Uluçay, 2020, p. 3938).

Table 12. Meeting and Stone Sky, J. Turrell (URL 30, URL 31).

| Meeting (URL 30) | Stone Sky (URL 31) |

Kahn's notable works that highlight his use of materials include the "Yale University Art Gallery," the "University of Pennsylvania Richards Medical Research Laboratories," and the "Salk Institute for Biological Studies." Among these examples, the Salk Institute stands out significantly in terms of material usage (Erkol, 2009, p. 57). In this structure, where Kahn employs exposed concrete, marble, and wood, he aims to elevate the user's relationship with space to a spiritual dimension. According to him, achieving permanence in a structure requires its existence not only physically but also spiritually. Kahn argues that this should be indirectly accomplished, and for this purpose, he integrates water, a complementary element, into the organization of the Salk Institute (Yıldız, 2020, pp. 54-55; Table 13).

Table 13. Salk Institute for Biological Studies, L. Kahn (URL 32, URL 33).

| An Interior View of the Salk Institute (URL 32) | A View from the Courtyard of the Salk Institute (URL 33) |

Turrell's approach to the concept of materiality is evident in his first installment of the series titled "Three Gems" within the "Skyspace" project. This structure, constructed in the form of a "stupa," one of the most significant symbols in Buddhism, invites the viewer to sit on stone benches within the space and observe atmospheric phenomena through a circular opening in the ceiling. It should be noted that stupas, in general, are minimalist architectural structures constructed in a hemispherical form and are used for meditation purposes (Snodgrass, 1985; as cited in Zöngür & Uluçay, 2020, p. 3937). The characteristics of stupas, in this context, can be seen as enhancing the meditation experience in Turrell's artwork. Similar to Roden Crater, this piece also offers the viewer an immersive interaction with nature. The display technique allows the perception of the work both from the exterior and interior, providing an experiential encounter within the indoor space. Turrell effectively employs concrete, polyester, and stone

in this artwork where he brings together art, nature, and technology. Furthermore, LED lighting arrays are utilized within the indoor space, particularly to draw attention to atmospheric phenomena (Zöngür & Uluçay, 2020, p. 3937) (Table 14).

Table 14. Three Gems, J. Turrell (URL 34, URL 35).

| Three Gems Exterior View (URL 34) | Three Gems Interior View (URL 35) |
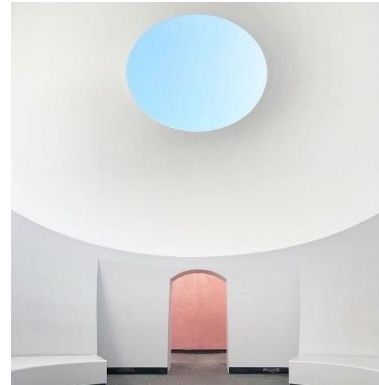
When examining these examples, it becomes apparent that Kahn approached natural and artificial materials in a way that preserves their inherent qualities. He used artificial materials such as exposed concrete and steel with a focus on simplicity and the principle of permanence in interior spaces. Kahn considered materials not only for their structural properties but also to convey a specific meaning. He aimed to emphasize the unique characteristics of materials by allowing light to traverse through the space. In contrast, Turrell employs light and darkness as complementary materials in the space. He also considers the environment in which his works are placed and positions his artworks accordingly. Turrell uses natural and artificial elements, such as concrete, stone, and plaster, in his works. Furthermore, he manipulates the surfaces by employing materials in rough, smooth, glossy, and matte textures to create a specific perception in the space.

Louis Kahn and James Turrell exhibit distinct approaches to space when considering their differences. In Kahn's approach, concepts such as symmetry, silence, and monumentality/permanence take precedence, while in Turrell's approach, concepts such as color, science, and perception come to the forefront (Figure 1). Kahn aimed to instill focus, balance, and momentum for the user through symmetry in his structures, achieving this by balancing geometric voids in walls, ceilings, and the facade's organization in the spatial plan (URL 36; Yıldız, 2020, p. 70). His Beaux Arts background likely influenced the development of this approach (Köseoğlu, 2017, p. 62). Kahn associated silence with light, considering them as "siblings" and recognizing their interdependence (Rabifard, 2011, p. 90). He asserted that silence originates from materials, and light completes it (URL 37). In his texts, he referred to the geometry and material of the Egyptian pyramids as silence, correlating this concept with light (Bilir, 2019, p. 52). Moreover, he stated that the existence of space is revealed through the expression of the concept of silence (Ersal, 2013, p. 96). Kahn's adoption of monumentality and permanence greatly influences spatial design and demonstrates the impact of classical architecture and religious texts on his structures (Bilir, 2019, p. 49; Yıldız, 2020, p. 70). His

design language evolved through travels to Rome, Egypt, and Greece, where he became influenced by the play of light on monumental forms in the Mediterranean (URL 38). The perception of space as a whole and an independent entity also contributes to its association with the concept of monumentality in Kahn's designs (Köseoğlu, 2017, p. 63).

In contrast, Turrell introduces an illusionary effect prominently in his works through mathematical and artistic touches. Illusions in his works are influenced by philosophical texts and perceptual phenomena. Turrell employs complementary elements and materials such as light, color (light and surface color), to create and convey this effect to the viewer. He aims to highlight spatial qualities in this way (Ertung, 2022, p. 1326; Poroy, 2014, p. 221; Zöngür & Uluçay, 2020, p. 3935). In addition to the illusionary effect, Turrell questions perception in his works, focusing on the viewer's bodily experience and using perception as a tool (Ertung, 2022, p. 1333; Poroy, 2014, pp. 216-217).

Conclusion

The study aims to delineate the similarities and differences in the perspectives on space within the disciplines of architecture and installation art. Through an examination of the works of Louis Kahn and James Turrell, the concept of space is scrutinized. The findings reveal both similarities and differences in how these two artists approach space (Figure 1). Expressions identified through content analysis, namely light, geometry, material, interaction, time, spirituality, and the concepts of fullness-emptiness, emerge as fundamental elements in the understanding of space within both architectural discipline and installation art. Among these, light, geometry, and material are frequently employed in the interpretation of space in both fields. However, interaction and spirituality are more prominent in Turrell's approach, while time and fullness-emptiness are emphasized in Kahn's interpretation of space.

In the creation and interpretation of space, both architecture and installation art share the common element of "light," which is effectively utilized to evoke spatial perception and meaning. The visual perception of space is intrinsically linked to the essentiality of light. Light highlights the desired elements by bringing them to the forefront and guiding the perception of the intended message. Nevertheless, unlike Kahn, Turrell utilizes the effect of light as a guide for other parameters.

Another shared aspect, the concept of "geometry," proves influential in the formal perception of space in both architectural discipline and installation art. This formal perception is employed, at times, as a mass, an object, and mostly as openings on surfaces. Geometric openings on surfaces facilitate the admission of natural light in both fields. However, while Kahn imbues the concept of geometry with symbolic meanings such as permanence, Turrell employs it as a tool to create the desired impact and perception in space without abstract connotations.

Lastly, when examining the concept of "material," it is noteworthy that Kahn utilizes natural and artificial materials in harmony with the essence of his structures, emphasizing the permanence of his works. On the other hand, Turrell employs nearly any material at his disposal, choosing them based on their influence on the viewer and the parameters of light. The temporal nature of Turrell's works allows for flexibility in material selection. In this context, the concept that is

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shared between both architecture and installation art also presents varying aspects based on its usage.

The fundamental distinction in the approach of Louis Kahn and James Turrell to space lies in the permanence or temporality of their respective works. While permanence is predominant in Kahn's structures, Turrell focuses on the perception his works create in the viewer.

In conclusion, both representatives exhibit unique perspectives, demonstrating different sensitivities towards the various layers of the spatial phenomenon. The study underscores the depth of the spatial phenomenon as a unifying element between the disciplines of architecture and installation art.

References

Akkaya, N. N. (2017). Louis I. Kahn, light is the theme: Louis I. Kahn and the Kimbell Art Museum: comments on architecture. *Milel ve Nihal, 14*, 213-221.

Atalay, M. C. & Baba, B. (2021, December). Arazi sanatçısı James Turrell'in yapıtlarında zaman kavramının ışık ile ifadesi. *BILTEK-V International Symposium on Current Developments in Science, Technology, and Social Sciences*, Malatya.

Altunok, A. (2019). *Yapay ışığın yapısal bir öge olarak soyut heykelde kullanımı*. (Master's thesis). Retrieved from the council of higher education thesis center (570250).

Balaban Varol, E. & Varol, A. (2022). Sanat aracılığıyla mekân deneyiminin aktarımı üzerine bir inceleme: Do Ho Suh. *Sanat ve Tasarım Dergisi, 12(2)*, 499-514.

Bilir, B. M. (2019). *Modernizmin revizyonu bağlamında geleneğin ihyası*. (Master's thesis). Retrieved from the council of higher education thesis center (592576).

Creswell, J. W. (2021). *Nitel araştırma yöntemleri: beş yaklaşıma göre nitel araştırma ve araştırma deseni*. Ankara: Siyasal Kitabevi.

Daşkesen, H. (2022). Işığın kaynak olarak kullanıldığı sanat yapıtlarında form arayışı. *The Journal of Academic Social Science, 133*, 88-111.

Demir, H. (2019). *Yerleştirme sanatı ve mekân: iç mimari tasarım örnekleri üzerinden değerlendirme.* (Master's thesis). Retrieved from the council of higher education thesis center (591325).

Erbay, M., Zorlu, T., Akgül, B., Onur, D. & Aras, A. (2013). *Sanat ve mimarlık arakesitinde tasarım stüdyoları (1st ed.).* Ankara: Nobel Yayınları.

Erkol, İ. (2009). *Utarit İzgi ve Türkiye'de modern mimarlık.* (Master's thesis). Retrieved from the council of higher education thesis center (251747).

Ersal, L. Ö. (2013). *Mimari mekânın biçimlendirilmesi ve anlam boyutu: ontolojik yaklaşım.* (Master's thesis). Retrieved from the council of higher education thesis center (350433).

Ertem, Ü. (2010). *Sinema ve mimarlık etkileşiminin örnek kara filmler üzerinden incelenmesi.* (Master's thesis). Retrieved from the council of higher education thesis center (292336).

Ertung, B. B. (2022). James Turrell'in ışıkla şekillenen enstalasyonları. *İdil Sanat ve Dil Dergisi, 97*, 1325-1337.

Erzen, J. N. (1976). Eğitimin estetik süreç olarak yorumu ve mimarlık eğitimi. *ODTÜ Mimarlık Fakültesi Dergisi, 2(2)*, 175-185.

Hasol, D. (2017). *20.yy. Türkiye mimarlığı.* İstanbul: Yem yayınları.

Kaya, Y., Sağsöz, A. (2022). İfade aracı olarak enstalasyon sanatı ve mimarlık: Rachel Whiteread ve Do Ho Suh' un eserleri üzerine bir inceleme. *Akademik Sanat, (15)*, 1-29.

Kayaduran, K., Gürdağ, B. (2022, September). Işığın tasarım sürecindeki görünürlüğü: Louis Kahn eskizleri üzerine bir inceleme. *Second International Symposium on Culture, Art and Society*, Van.

Kosky, J. L. (2013). Contemplative recovery: the artwork of James Turrell. *CrossCurrents 63(1)*, 44-61.

Köse Doğan, R. (2016). Resim ve mekân arasındaki ilişki: ilham veren projeler. *Online Journal of Art and Design, 4(2),* 48-65.

Köseoğlu, E. (2017). Louis I. Kahn yapılarının biçim dili. *Mimarlık Dergisi, 394*, 62-66.

Manav, B. (2011). Hacimde bir tasarım parametresi olarak renk. *Sanat ve Tasarım Dergisi, 1(8)*, 93-102.

Mulla, G. (2019). *Bir tanık olarak mekan.* (Art Proficiency Thesis). Retrieved from the council of higher education thesis center (561317).

Poroy, A. (2014). Sanat ve bilimin kesişiminde bir yerleştirme sanatçısı: James Turrell. *Sanat ve Tasarım Dergisi, 6(6)*, 212-223.

Rabifard, M. (2011). *The integration of form and structure in the work of Louis Kahn.* (Unpublished master's thesis). Eastern Mediterranean University, Northern Cyprus.

Seyidoğlu, H. (2020). *Bilimsel araştırma ve yazma el kitabı*. İstanbul: Güzem Can Yayınları.

Uçar, T. F. (Ed.). (2011). *Görsel kültür*. Eskişehir: Web-Ofset.

URL 1: https://archi101.com/mimarlar/louis-kahn/, Access Date: 04.06.2023

URL 2: http://www.mimarhane.org/louis-kahn/, Access Date: 04.06.2023

URL 3: https://www.arkitera.com/haber/louis-kahna-yeni-den-bakis/, Access Date: 14.12.2023

URL 4: https://www.arts.gov/honors/medals/james-turrell, Access Date: 14.12.2023

URL 5: www.architectural-review.com/rethink/viewpoints/louis-kahn-the-space-of-ideas/8637503, Access Date: 04.06.2023

URL 6: http://jamesturrell.com/about/introduction/, Access Date: 04.06.2023

URL 7: https://web.archive.org/web/20220104163131id_/https://www.e-periodica.ch/cntmng?pid=ptt-001:1990:0::991, Access Date: 04.01.2024

URL 8: https://www.wikiart.org/en/james-turrell/wedgework-3-1974, Access Date: 04.01.2024

URL 9: https://www.levygorvy.com/exhibitions/depth-perception-james-turrell/, Access Date: 04.01.2024

URL 10: https://exploringupstate.com/first-unitarian-church-rochester-ny/, Access Date: 04.01.2024

URL 11: https://www.archdaily.com/84267/ad-classics-first-unitarian-church-of-rochester-louis-kahn, Access Date: 04.01.2024

URL 12: https://www.guggenheim.org/artwork/4084, Access Date: 04.01.2024

URL 13: https://www.guggenheim.org/artwork/4088, Access Date: 04.01.2024

URL 14: https://kimbellart.org/art-architecture/architecture/kahn-building, Access Date: 26.10.2023

URL 15: https://www.archdaily.com/123761/ad-classics-kimbell-art-museum-louis-kahn/5038 08a328ba0d599b000a3f-ad-classics-kimbell-art-museum-louis-kahn-photo?nextproject=no Access Date: 04.01.2024

URL 16: https://rodencrater.com/about/, Access Date: 04.01.2024

URL 17: https://www.pacegallery.com/journal/support-light/, Access Date: 14.12.2023

URL 18: https://rodencrater.com/spaces/alpha-east-tunnel/, Access Date: 14.12.2023

URL 19: https://www.archdaily.com/63683/ad-classics-exeter-library-class-of-1945-library-lou is-kahn/5037e19728ba0d599b0001c2-ad-classics-exeter-library-class-of-1945-library-louis-kahn-ground-floor-plan?next_project=no, Access Date: 04.01.2024

URL 20: https://www.archdaily.com/63683/ad-classics-exeter-library-class-of-1945-library-loui s-kahn/5037e18c28ba0d599b0001be-ad-classics-exeter-library-class-of-1945-library-louis-ka hn-photo?next_project=no, Access Date: 04.01.2024

URL 21: https://www.spencerart.ku.edu/exhibition/james-turrell-gard-blue, Access Date: 04.01 .2024

URL 22: https://www.artsy.net/artwork/james-turrell-projection-series-carn-green-1, Access Date: 04.01.2024

URL 23: https://youtu.be/81lShPkLcz4?si=d7ccWnqULzLneScI, Access Date: 04.01.2024

URL 24: https://arkeopolis.com/louis-kahna-yeni-den-bakis-sergisi/, Access Date: 04.01.2024

URL 25: https://www.arkitektuel.com/banglades-ulusal-meclis-binasi/, Access Date: 06.11. 2023

URL 26: https://www.thecollector.com/james-turrell-skyspace-art/, Access Date: 06.11.2023

URL 27: https://www.canberratimes.com.au/story/6071966/james-turrells-skyspace-at-the-national-gallery-is-canberras-number-one-pash-point/, Access Date: 04.01.2024

URL 28: https://www.nytimes.com/2016/05/01/arts/design/whispers-of-louis-kahns-vision-at-the-yale-center-for-british-art.html, Access Date: 04.01.2024

URL 29: https://metropolismag.com/viewpoints/kahns-concrete/, Access Date: 04.01.2024

URL 30: https://www.flickr.com/photos/musaeum/8866485658, Access Date: 04.01.2024

URL 31: http://nothingmajor.com/journal/tags/light/, Access Date: 04.01.2024

URL 32: https://www.archdaily.com/61288/ad-classics-salk-institute-louis kahn/5037dfb328ba 0d599b00012e-ad-classics-salk-institute-louis-kahn photo?next_project=no, Access Date: 06. 11.2023, 04.01.2024

URL 33: https://www.salk.edu/about/, Access Date: 04.01.2024

URL 34: https://hainesgallery.com/james-turrell-work, Access Date: 04.01.2024

URL 35: https://secretsanfrancisco.com/turrell-deyoung/, Access Date: 10.12.2023

URL 36: https://www.youtube.com/watch?v=b99oGua6V20, Access Date: 10.12.2023

URL 37: https://www.youtube.com/watch?v=LIxhfU1EVBA, Access Date: 10.12.2023

URL 38: https://www.youtube.com/watch?v=47hXQTNeXO4&t=6s, Access Date: 10.12.2023

Usta, G. (2020). Mekân ve yer kavramlarının anlamsal açıdan irdelenmesi. *Turkish Online Journal of Design, Art, and Communication, 10(1)*, 25-30.

Üngür, E. (2011). *Mekân kavramının disiplinler arası tarihsel değişimi üzerinden mimarlık & mekân ilişkileri.* (Master's Thesis). Retrieved from the council of higher education thesis center (310492).

Taşkaya, Y. (2022). *İfade aracı olarak enstalasyon sanatı ve mimarlık*. (Master's thesis). Retrieved from the council of higher education thesis center (752097).

Taştan, R. T. (2018). *Türkiye' de çağdaş sanatta yerleştirme (enstalasyon) ve kültür*. (Art Proficiency Thesis). Retrieved from the council of higher education thesis center (519359).

Toluyağ, D. (2020). Sanat pratiğinde enstalasyon, mekan ve nesne. *Akademik Sanat, 5(11)*, 101-114.

Yerce, N. E. (2007). *Enstalasyon ve mekanı*. (Master's thesis). Retrieved from the council of higher education thesis center (223607).

Yıldırım, A. & Şimşek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri. (7th ed.).* Ankara: Seçkin Yayıncılık.

Yıldız, A. (2020). *Louis Kahn yapılarının iç mekan biçimlenişi*. (Master's thesis). Retrieved from the council of higher education thesis center (619799).

Zöngür, C., Uluçay, N. Ö. (2020). Sanatta mekânın yeni deneyimi: James Turrell. *Turkish Studies, 15(8),* 3931-3941.

Research Article

A CASE STUDY OF CLASH DETECTION FOR EARLY DESIGN PHASES IN BUILDING INFORMATION MODELLING

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Abstract The utilization of digital modeling, monitoring, and simulation techniques in architectural and engineering projects at a real-world scale, following a predetermined workflow schedule, presents numerous advantages to key players and users involved in the construction process. Building information modeling and one of its associated advantages, clash/overlap detection, can play an important role during the initial stages of design development. The analysis of clash detection, which is a method that effectively identifies the overlap between spatial and three-dimensional geometric entities, facilitates a feedback-based design approach. The process of identifying and analyzing clashes can be conducted prior to the implementation phase, so guaranteeing long-term viability in relation to both temporal and financial aspects. In the context of this work, an examination of the available literature was conducted utilizing bibliometric approaches to get insight into the theoretical underpinnings of clash detection. In the present situation, significant clusters were acquired. In the methodology section, the modeling of the architectural design and structural project design for a two-storey architecture student center (ASC) project, spanning roughly 1200 square meters, was undertaken. The architectural and structural concepts of this project were designed using Autodesk Revit 2020 software, which is one of the building information modeling tools. Subsequently, clash detection analysis was employed. The analysis of clash detection was carried by using Autodesk Navisworks Manage 2020 software. The clashes, both soft and hard, were categorized and examined based on the achieved outcomes.

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Introduction

The successful implementation of digitalization processes holds significant value within the architecture, engineering, construction, and operations (AECO) industries. Computer-aided design (CAD) technologies and the adoption of building information modelling (BIM) practices have exerted a significant influence on both national and worldwide contexts within the facility construction management and building industry. Numerous benefits of employing BIM approaches are used by stakeholders within the construction sector. BIM has altered building design, construction, and operation, helping enhance profitability, decrease costs, improve time management, and improve client-customer interactions (Azhar, Khalfan & Maqsood, 2012). Various users in the organization, including design teams, 3d modelers, project managers, developers, investors, and field engineers, can derive advantages from the potential offered by building information modelling. Architectural design and planning processes encompass multiple dimensions and layers, necessitating collaboration with various disciplines, including civil/structural engineering, mechanical engineering, geotechnical engineering, landscape design, and electrical engineering. Accordingly, the management of these disciplines and sub-components from a singular source is a considerable challenge. The development of industry-specific digital technologies and the establishment of effective team collaboration are highly advantageous for the construction operations. The utilization of computer-aided design tools such as 2D or 3D geometry generating tools and visualization platforms has provided foundation for the advancement of digitalization in the field of construction, leading to the development of building information modelling methodologies. Though object-based parametric modeling is crucial to BIM, other design, analysis, control, presentation, and reporting tools can also play an integral part in BIM processes (Eastman, Eastman, Teicholz, Sacks & Liston, 2011). BIM culture has the capacity to coordinate the cohesion between all building components, such as architectural, mechanical, structural, and landscape and stakeholders through virtual platforms. Furthermore, the impact of BIM models is crucial in conducting 4D, 5D, and 6D simulations. By analyzing specific characteristics of construction actions, one can acquire visualizations and reports using these simulations. Besides, the utilization of BIM tools facilitates the generation and supervision of virtual digital twins of infrastructure projects, as well as superstructure projects including public housing, hotels, cultural and sports venues, and industrial facilities. BIM methodologies are useful for spatial processing and visualization, therefore using 3D models to identify possible clashes/conflicts/collisions has gained popularity (Hu & Castro-Lacouture, 2019). The verification of integrated complex digital models across all construction disciplines for a given building is an essential step that should be undertaken prior to the commencement of manufacturing or implementation. The design's effectiveness and efficiency are significantly improved through the implementation of automated clash detection, which relies on BIM techniques (Koo & O'Connor, 2022).

There are potential benefits for the architecture, engineering, and construction industries to use sophisticated BIM digital tools for a variety of purposes throughout project development phases. These benefits can be composed of the 3D spatial analysis, clash avoidance methods,

and clash/collision/overlap detection for monitoring and reporting design error occurrences. The primary advantage of BIM in the initial design phase lies in its ability to facilitate design coordination, ensuring the seamless integration and coordination of all design systems to prevent clashes (Wong, Zhou & Chan, 2018). Additionally, monitoring and visualization of design coordination in a three-dimensional setting is of utmost importance, particularly for complex projects. Since collision detection is performed in a 3D environment, it is also important to develop domain-oriented algorithms. Chidambaram (2020) asserts that clash-detection procedures utilize either "rule-based or geometry-based algorithms" to analyze the model and recognize probable conflicts. Transferring digital models of the same building from different disciplines to a common environment and computing their spatial and geometric relationships in terms of intersections and three-dimensional proximity constitutes clash detection (Figure 1). Clash detection, a parametric modeling technique that evaluates the proximity of 3d constituents in a model, can be performed by stand-alone BIM tools (Bockstael & Issa, 2016). By doing clash/overlap detection, it becomes feasible to effectively handle the tasks of visualizing, reporting, and monitoring design errors, hence facilitating the formulation of revision procedures as and when required. Specifically, the ability to visually represent design errors in 3D is crucial not just for effectively managing construction in large-scale projects, but also for supporting effective communication and collaboration between the design and implementation teams. Once the design faults have been rectified through revision, the conflict detection analysis can be conducted anew, allowing for a comparison between the initial and revised versions of potential design issues. These benchmarking processes enhance the project management process by making it analytical and programmatic, hence minimizing design development efforts such as shop drawings or on-site drawings. By doing so, it enables the development of a sustainable strategy in the domains of financial management and human resources management. Clash/overlap detection can provide a significant and tangible contribution to the project stakeholders and help reduce the project timeline. Nevertheless, prior preparation is necessary for this analysis.

Clash detection necessitates the inclusion of 3D project development task packages. Initially, it is important to develop 3D project models such as exterior walls, curtain walls, slabs, suspended ceilings, foundations, doors, windows, façade elements, staircases, elevators, ramps, interior walls, structural elements, roof systems, lighting fixtures, HVAC (heating, ventilation, and air conditioning) elements, plumbing systems, car or bicycle parking elements, and landscape parts and establish a comprehensive project timeline. The initial phase encompasses several elements, including the collection of project input data such as textual data and specifications, the development of 3D semantic models that incorporate both geometric objects and qualitative data, drafting of a preliminary project schedule outlining the sequence of work packages, and the determination of the desired level of detail for the models (Figure 1).
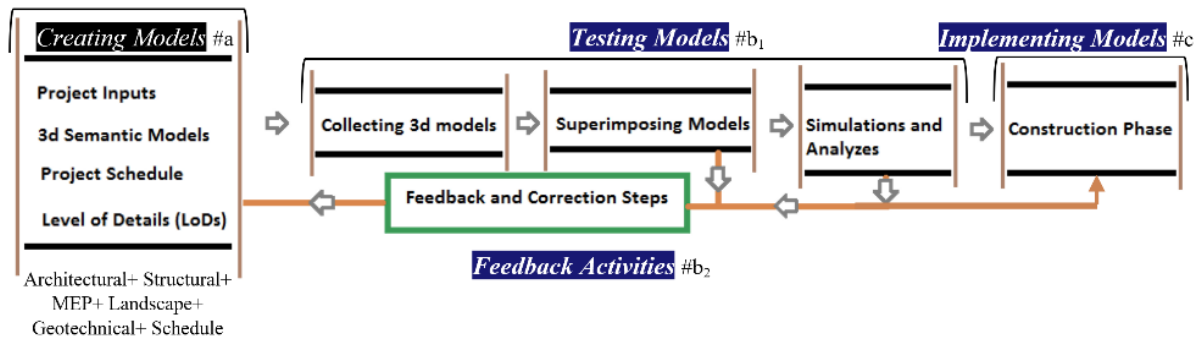
Figure 1. BIM-based clash detection sample workflow (lower) and integrated model (upper) (Drawn by Authors, 2023).

The initial clash detection stage is conducted by all project teams, including architectural, mechanical, electrical, and other relevant disciplines, with the purpose of generating models specific to each respective field. The subsequent phase involves the gathering of models from many disciplines of study. The subsequent phase involves the superimposition of the models. Subsequently, the amalgamated models are transported to alternative contexts to facilitate simulation and analysis. Given that the stages are all part of the pre-production process, it is feasible to conduct tests and simulations in virtual environments, hence allowing for the identification and rectification of design mistakes. The practical detection of clashes is encompassed within the technique employed in this study, as depicted in Figure 1. The present study involves an examination of a specific scenario, wherein a clash detection is conducted utilizing contemporary digital tools. The workflow employed in this analysis is thereafter presented in a diagram schematically. The objective of this study is to assess the clash detection methodology, which holds a significant position in the BIM culture, by conducting a case study and analyzing the procedure. This study is a practical investigation that aims to comprehend the inputs and progression of the process by conducting a case study. This study additionally investigates the various aspects related to the architectural and structural systems of a two-story social and cultural center, spanning approximately 1,200 square meters. These aspects include conceptual design, 3D modeling (such as architectural, structural, artificial lighting, and landscape), clash detection, labeling, reporting, and comparative analysis.

Progress was achieved in accordance with the architectural program, design choices, and the suggested structural system during the concept design and 3D modeling stages. Subsequently, preparations were undertaken for the analysis of clash detection. The analysis procedure was executed, and outcomes were acquired. Based on the acquired outcomes, remarks were resulted regarding the locations and types of clashes. Besides, a systematic literature review has been carried out to interpret the integration between BIM and clash detection through the studies and to understand what may be the missing aspects.

Theoretical Framework

BIM can be used in both infrastructure (Bradley, Li, Lark & Dunn, 2016) and superstructure (Yamazaki, Tabuchi, Kataoka & Shimazaki, 2014) projects. Furthermore, BIM has the capacity to be applied in the field of lean management (Eldeep, Farag & Abd El-hafez, 2022) and sustainable projects, also known as "green BIM" (Krygiel & Nies, 2008). The approaches of BIM techniques provide the potential to significantly transform the design culture and, consequently, the virtual design and construction phases. BIM digitally generates an exact virtual model of a building by simulating the construction process in a virtual environment (Azhar, Nadeem, Mok & Leung, 2008). A significant benefit is the provision of a shared virtual environment for users and stakeholders, which remains accessible across various design phases. Therefore, using design feedback mechanisms helps expedite the revision processes. In contrary to computer-aided design methodologies, the utilization of BIM technology and its various components, including inter-systems coordination and tangible contributions to early design phases (such as clash prevention, mass modeling, conceptual design development, creating project time schedule, cost analysis, developing fabrication strategies for prototypes, building energy analysis, and generative design), holds promising benefits for several designers and decision makers (such as BIM managers, architects, lead designers, and BIM engineers). Identification of 3D clashes is essential to solve errors or significant conflicts before implementation to prevent delays and costs, and also resolving serious conflicts is the most time-consuming and difficult task (Lin & Huang, 2019). Clash detection a crucial component of the BIM culture and is important for designers and engineers to conduct 3D analyses in virtual environments. In this context, this study uses bibliometric tool to explore the terms of "clash detection" and "building information modeling" terms as discussed in the existing literature. Bibliometric analyses are key for comprehending the overall structure of studies and assessing their distribution throughout time. Besides, bibliometric or scientometric analyses related to BIM are also available in literature (Jin, Zou, Gidado, Ashton & Painting, 2019; He et al., 2017; Zhao, 2017; Liu, Lu & Peh, 2019; Olawumi, Chan & Wong, 2017; Li, Wu, Shen, Wang & Teng, 2017). By conducting these analyses, we can observe the role of conflict/clash/overlap detection analysis in the BIM culture and its connection with other disciplines. Furthermore, we can visualize the impact of BIM through the obtained results. Therefore, during the development of the theoretical framework for this study, we applied the aforementioned analyses and visualized the outcomes as patterns.

Clash management plays a crucial role in ensuring the consistent quality of design and mitigating the need for adjustments or rework at the construction site (Hu, Castro-Lacouture,

Eastman & Navathe, 2021). The field of clash detection in 3D building information modeling has undergone significant advancements since its initial development in the disciplines of computer graphics and robotics (Akponeware & Adamu, 2017). The results of the clash/collision detection analysis can be categorized into different categories. Tommelein and Gholami (2012) suggest that clashes can be categorized into three distinct types: soft clash, hard clash, and time clash. Soft clash or clearance clash is a failure caused by insufficient space between components (for reasons such as "access, insulation, and safety") (Seo, Lee, Kim & Kim, 2012, p.306). In a hard clash, two building components occupy the same space completely or partially (Trebbi, Cianciulli, Matarazzo, Mirarchi, Cianciulli & Pavan, 2020). Time clash, in contrast to the definitions of soft and hard clash, "includes spatial challenges to constructability or operability" (Tommelein & Gholami 2012, p.3). Besides, according to Wang & Leite (2016), the speed of the clash detection technique has been increased, and the visualization capabilities have been improved by utilizing programs, such as Autodesk Navisworks Manage and Solibri Model Checker. According to Elyano (2021), building information modeling-based clash analysis is a potential task for productivity on construction projects.

To comprehend and interpret the concept of "clash detection", which is a subcomponent of building information modelling technology, using bibliometric analysis on academic big data, the first step is defining the scope of this research's theoretical framework section. One of the points of this study`s theoretical framework is to understand the relationship between building information modeling and clash detection, using academic big data (Figure 2).

Figure 2. Bibliometric analysis path for this study (Drawn by Authors, 2023).

Using VOSviewer (Van Eck and Waltman, 2010; Van Eck and Waltman, 2014) tool, a visual representation was generated to illustrate the interconnections of scholarly publications pertaining to clash detection, which were sourced from the SCI-E and SSCI databases. Initially, the phrase "building information modeling" and "clash detection" were inputted (together and separately) as search keywords within the Web of Science (WoS) database, and the resulting metadata was subsequently transferred to the VOSviewer digital tool. Based on the findings of the co-occurrence analysis, it is evident that the word "Clash detection" term has emerged as a prominent focus in recent scholarly investigations (Figure 3).

Subsequently, a bibliometric analysis centered on the term "clash detection" was conducted by establishing rules, fine-tuning parameters, and implementing filters (e.g., cleaning repeating terms) within the VOSviewer platform. According to the co-occurrence analysis performed on the term "clash detection," seven clusters were established, and the number of items inside each group was distributed in a non-normalized technique (Figure 4a and 4b). An examination of the group components reveals that their applications are most prevalent in the sectors of

construction management, information system, 4-D simulation, and design coordination. Other groupings include data visualization, perception, simulators, simulations, enjoyment, game play, and experiences.

Figure 3. Results of co-occurrence analysis via network mapping (Drawn by Authors via VOSviewer, 2023).
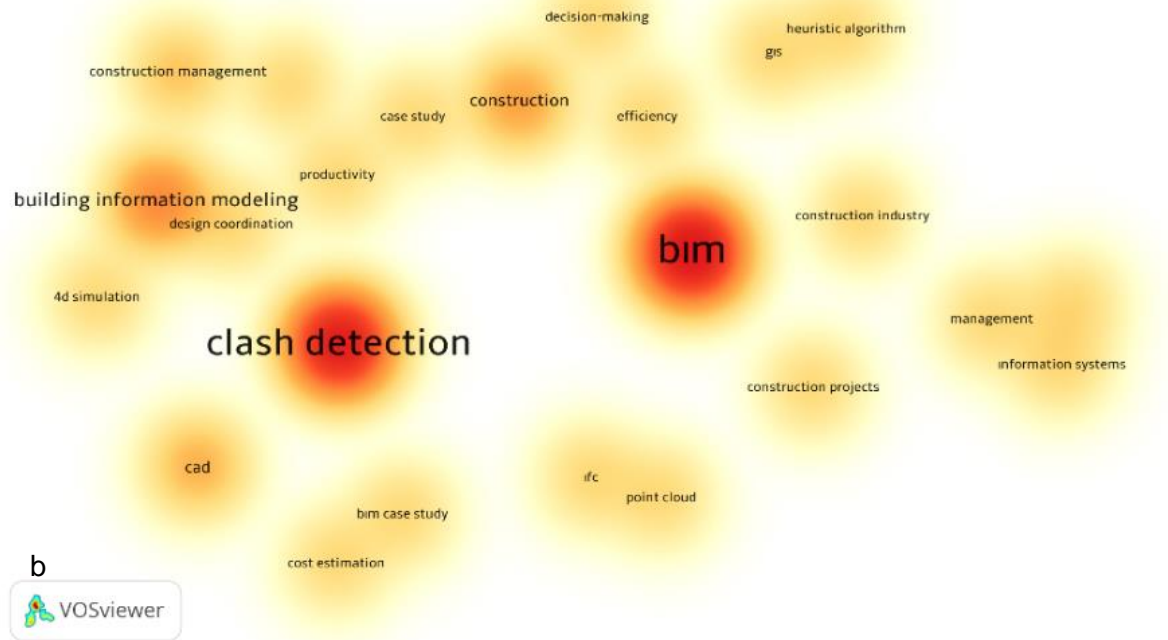
Figure 4. a) Results of co-occurrence analysis via network, b) Results of co-occurrence analysis via density mapping (Drawn by Authors via VOSviewer, 2023).

Methodology

Within the context of the building information modelling culture, the generation of three-dimensional models and the identification of conflicts through clash detection analyses play a crucial role in the design process. A process referred to as clash detection, collision detection, or coordination must be performed on multiple BIM models to achieve harmonious coordination (Chidambaram, 2020). An essential and fundamental component of BIM, conflict detection occurs during the design phase to rectify issues or errors discovered prior to construction beginning (Rakib, Howlader, Rahman & Bhuiyan, 2019). This study encompasses various components related to a two-story social-cultural institution with an enclosed space of approximately 1200 square meters, including design development, digital modeling, transferring 3D models, clash detection analysis (e.g., architectural model and draft structural model), manual inspection and labeling, reporting, 4D simulation such as micro and macro 4D simulations for time clash, and comparative analysis (Figure 5).
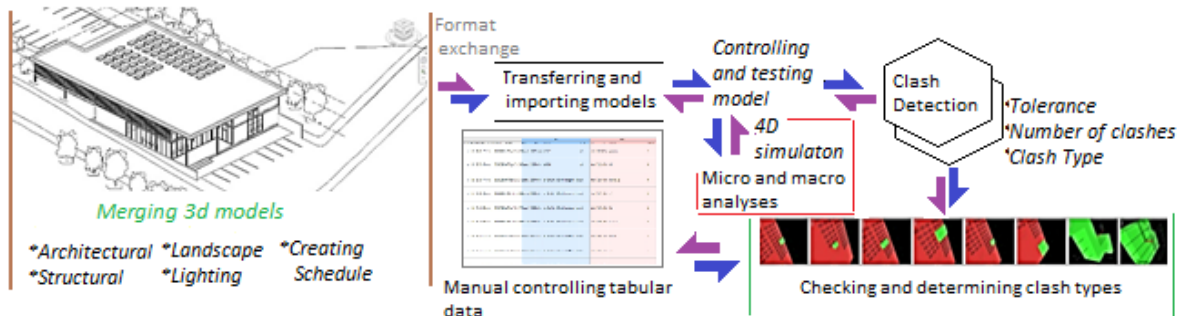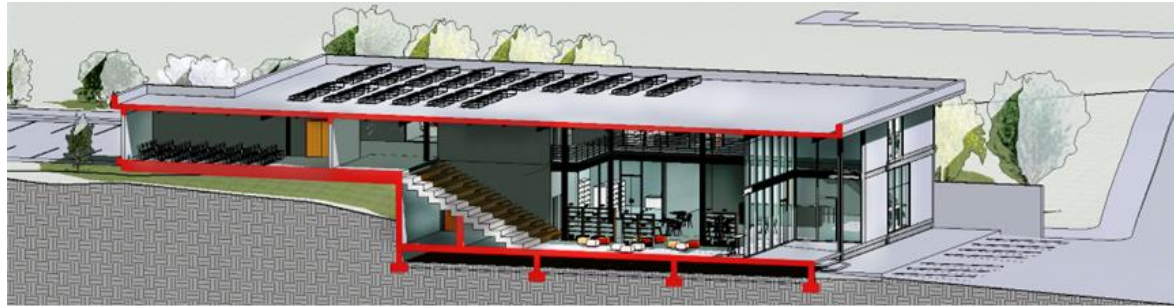

Figure 5. Workflow of this study's clash detection process (Drawn by Authors, 2023).

Initially, the requirements program was delineated, and subsequent design selections were formulated through a collaborative manner, incorporating ergonomic and sustainable considerations pertaining to the facility. The project aims to create a novel environment that facilitates student interaction, as the current lack of designated spaces for socializing, collaborating, studying, and knowledge exchange among students is evident. The objective of this project was to include principles of sustainability into the curriculum of architecture students as well as extend its impact to the entire campus community. The proposed project is intended to be constructed on the northeastern side of the E block, which is situated at the Urla campus of Izmir Institute of Technology (IZTECH), specifically within the premises of the Faculty of Architecture. The determination of the spatial arrangement of semi-open, open, and closed areas, as well as the selection of landscape features and architectural spaces, was undertaken at the initial phase of concept design. Concurrently, an architectural model was generated using building information modeling tools (i.e., Autodesk® Revit® 2020) to facilitate the conceptual mass design and visual depiction of preliminary concepts (Figure 6). The level of detail (LoD) was established as 100 during the concept phase and increased to 300 for the final model. The proposed project's structural system, characterized by a composite form in structural terms, has been meticulously planned and modeled with a comparable level of detail. Lighting components were designed and integrated into the interior space. Simultaneously, the draft 3D model incorporated both semi-open and open space configurations, as well as landscape design decisions. An integrated model was generated by incorporating architectural, structural, lighting, and landscape design selections into the modeling process. The model's components, which incorporate both architectural and structural features, may require verification in accordance with the conceptual design rules. Hence, verifying the integrated 3D model is another crucial step. Adjusting the geometry of the components in the model is another factor that aids the process. The attribute tables that have been generated should also undergo verification during the control phase. The final stage of the process was conducting a clash detection analysis (Figure 7).

The three-dimensional geometric system was subsequently loaded into Autodesk® Navisworks® Manage 2020, utilizing the specific (.NWC) file format (Figure 7). Several research have demonstrated the contribution of this digital tool to the process of clash identification and reporting (Porwal & Hewage, 2013; Valunjkar, 2017; Kermanshahi, Tahir, Lim, Balasbaneh & Roshanghalb, 2020). After being transferred to a Navisworks environment, it is important to quickly verify the geometry. Prior to conducting an analysis, it is necessary to establish clear and well-defined clash rules.

Level	Room Name	Area (m²)
ENTRANCE LEVEL (-3.00 m)	Entrance Hall	38.00 m²
	Cafe & Bar	151.40 m²
	Hall	49.28 m²
	Multifunctional Area	101.01 m²
	Stores	71.52 m²
	Service Room	23.50 m²
	Storage	32.26 m²
	WCs	6.68 m²

Level	Room Name	Area (m²)
SECOND LEVEL (+1.00 m)	Administration Office	30.43 m²
	Conference Room	92.63 m²
	Entrance Hall	75.39 m²
	Hall	73.46 m²
	Lecture Room	56.19 m²
	Medical Room	12.74 m²
	Meeting Room & Group Study	30.87 m²
	Office	38.04 m²
	Rest Room	4.54 m²
	Service Room	23.50 m²
	Storage	7.40 m²
	WCs	18.06 m²

Figure 6. Architectural conceptual program (lower) and proposed conceptual 3D model (upper) (Drawn by Authors, 2023).

During clash detection protocols, it is necessary to define the types of clashes, so it is important to accurately determine the rules and metric limits. These rules are entered into the system prior to analysis. The determination of tolerance value ranges is conducted during this stage. Besides, the precision of clash detection can be enhanced by eliminating conflicts that are no longer pertinent (Hu, Castro-Lacouture & Eastman, 2019). Hasannejad, Sardrud & Shirzadi Javid (2022, p.2431) posit that the present approaches to enhance clash detection precision can be classified into three key sections: "avoiding clashes, improving clash detection algorithms, and filtering irrelevant clashes." After filtering and extracting the analysis results in XML format, a thorough examination was conducted to identify and classify both soft and hard overlaps. To determine if there is a collision in workflow or a time overlap, a conceptual work plan was designed. This schedule tries to depict the chronological link between work packages. During the final phase of the project, 4-D simulation models were generated at a macro level of detail, taking into consideration schematic construction durations. Besides, 4-D simulations are highly efficient for visualizing the construction process and project schedule simultaneously.
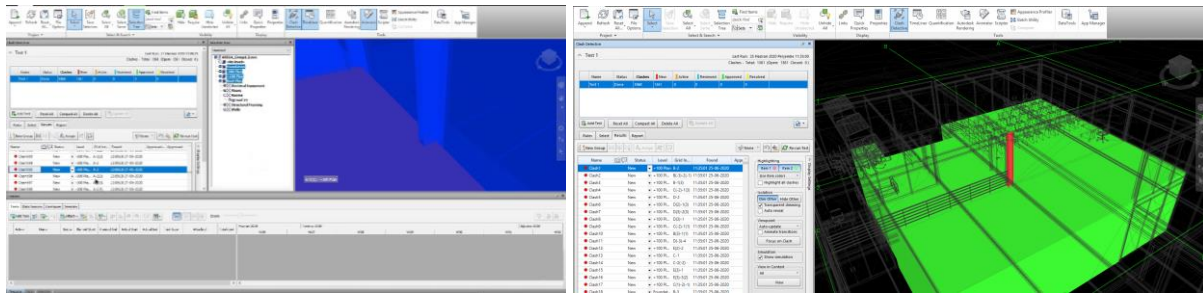
Figure 7. Transferring 3D model to Navisworks environment and defining clash tolerance rules
(Drawn by Authors, 2023).

Results

The present study aimed to evaluate the efficacy of clash detection approaches in the context of architectural and structural projects pertaining to a small-scale socio-cultural facility (Figure 8).
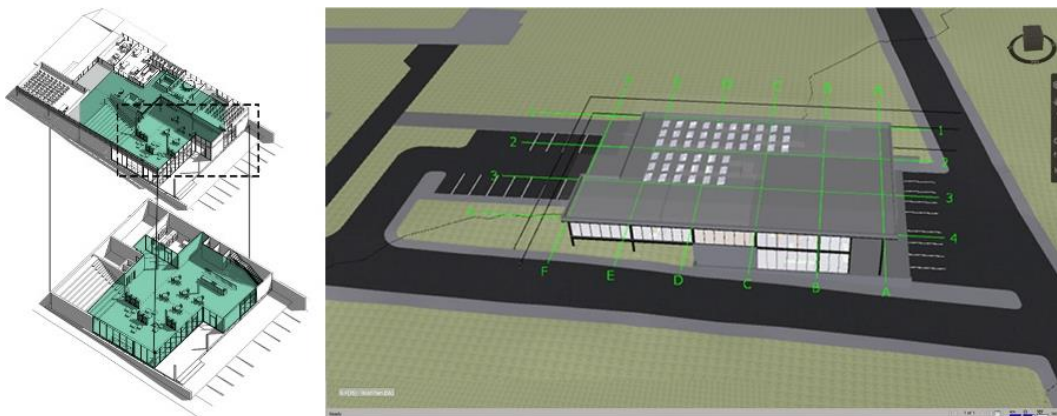

Figure 8. Integrated 3D model for clash detection tests and BIM-based 4-D simulations (micro and macro levels) (Drawn by Authors, 2023).

Within the scope of the study, the clash detection tests were examined in two distinct areas, namely the bottom floor and the first story (Figure 9). Overlap locations and items can be categorized into two main groups: architectural components, such as interior walls, span elements, objects, structural elements (including columns, beams, and slabs). Each section's soft and hard overlaps were painstakingly fine-tuned and manually regulated to ensure consistency. Based on the findings, the first floor exhibited the highest level of inaccuracy, while the bottom floor demonstrated the lowest level of error. The primary factor contributing to the higher rate of overlap on the ground floor can be attributed to the points of connection between the partition walls and the steel beams. The presence of soft overlaps has been attributed to modeling flaws, particularly those related to the inaccurate positioning of components and their interconnections with other objects. While analyzing the geometric relationships between intersecting and closely positioned pieces, it was observed that there were a greater number of architectural-static groups compared to architectural-architectural and static (structural)-static (structural) groups. When analyzing time overlap at the macro detail level for the BIM model, the schedule generated with schematic durations does not contain nesting.
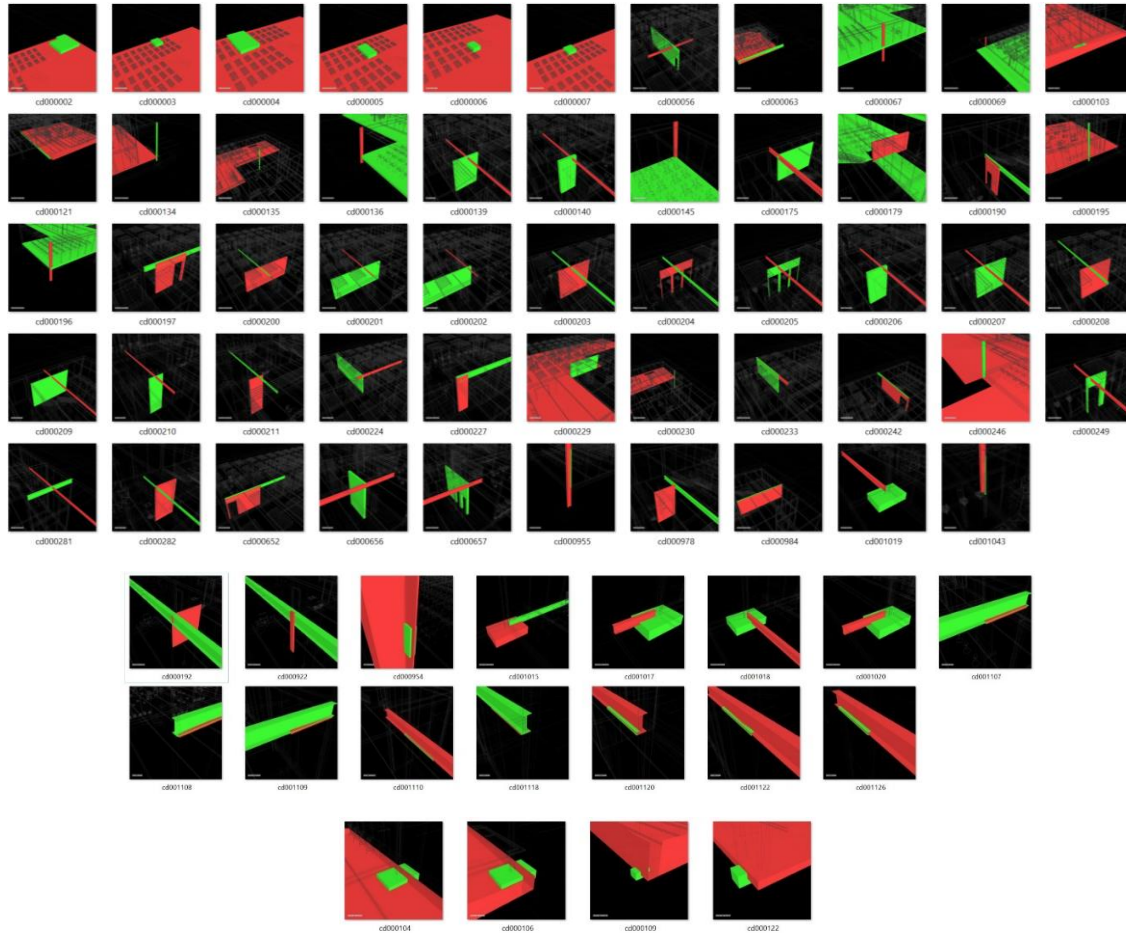
67

Figure 9. Preliminary Results of Soft and Hard Clashes (Drawn by Authors via Navisworks, 2023).

Conclusion

The utilization of digital environments to produce 1:1 scale replicas of architectural and engineering projects, along with their subsequent monitoring and simulation in accordance with the workflow schedule, offers numerous benefits to stakeholders and users within the construction industry. The utilization of computer-aided design and building information modeling tools has resulted in a pervasive demand for digital documentation within the construction sector. Once comprehensive three-dimensional models have been generated, a wide range of spatial analyses can be conducted. The implementation of BIM culture in construction and project processes enables the execution of 3D spatial analyses in both the design phase and construction activities, leading to more manageable responsibilities for designers. BIM tools enable the design, analysis, and visualization of the coordination and integrity of 3D models. One of the analyses conducted is conflict/clash/collision detection analysis, which examines whether the models from different disciplines intersect geometrically in the virtual environment. Virtual 3D modeling and clash/collision/overlap detection analysis provide numerous advantages to design teams, particularly throughout the design phases of extensive projects. Primarily, it enhances the ability to predict and intervene in the architectural project, hence mitigating the likelihood of comparable challenges being encountered by other

teams. The technique facilitates the three-dimensional assessment of the compatibility between architectural projects and projects from other disciplines, including structural, mechanical, and electrical aspects. Hence, the presence of any potential issues related to the intersection of different geometric entities becomes apparent. Once intersection 3D models have been identified, it is crucial to analyze the detection of overlaps and devise solutions for potential issues. Reports can be labeled either manually or automatically. Developing efficient procedures, equations, or algorithms is vital due to the time-consuming nature of this operation.

Clash/collision/overlap detection analysis constitutes a fundamental component within the BIM process, enabling pre-production assessment in both design and field settings. Clash detection analysis also aids in the implementation of feedback design concept, as it allows for the identification of design errors, leading to the development of solutions and subsequent redesign. This analysis effectively unveils the junction between spatial and three-dimensional geometric entities. Besides, the improvement in the design-focused teams' cooperation and problem-solving approach. Spatial and geometric overlaps are a source of difficulty. The model's outcomes in this context are useful for identifying and assessing prospective clashes, as well as developing viable resolutions. Throughout all phases of the project, architects or engineers must employ clash avoidance tactics or conduct clash detection testing. Thus, as part of this study's scope, clash detection, analysis, and reporting were performed on a sample model, and the error causes were identified and reported. Throughout the design phases, there were also tests into the effectiveness of generally clash detection systems, which proved to be useful. This practice yields significant benefits in terms of cost reduction, time efficiency, and labor optimization. The present study exhibits a limited sample size, hence necessitating future investigations to encompass larger and more intricate endeavors. Furthermore, future studies will include testing collision/clash avoidance software that is specifically developed as an extension within the BIM software.

Acknowledgements

References

Akponeware, A. O., & Adamu, Z. A. (2017). Clash detection or clash avoidance? An investigation into coordination problems in 3D BIM. *Buildings, 7*(3), 75.

Azhar, S., Khalfan, M., & Maqsood, T. (2012). Building information modeling (BIM): now and beyond. *Australasian Journal of Construction Economics and Building, 12*(4), 15-28.

Azhar, S., Nadeem, A., Mok, J. Y., & Leung, B. H. (2008, August). Building Information Modeling (BIM): A new paradigm for visual interactive modeling and simulation for construction projects. In *Proc., First International Conference on Construction in Developing Countries* (Vol. 1, pp. 435-46).

Bockstael, D., & Issa, M. H. (2016). A methodology for contractor clash detection using building information modelling on commercial construction projects. *Journal of information technology in construction (ITcon)*, *21*(16), 233-249.

Bradley, A., Li, H., Lark, R., & Dunn, S. (2016). BIM for infrastructure: An overall review and constructor perspective. *Automation in construction*, *71*, 139-152.

Chidambaram, S. (2020). The application of clash-detection processes in building information modelling for rebars. *Proceedings of the Institution of Civil Engineers-Smart Infrastructure and Construction*, *172*(2), 53-69.

Eastman, C. M., Eastman, C., Teicholz, P., Sacks, R., & Liston, K. (2011). *BIM handbook: A guide to building information modeling for owners, managers, designers, engineers and contractors*. John Wiley & Sons.

Eldeep, A. M., Farag, M. A., & Abd El-hafez, L. M. (2022). Using BIM as a lean management tool in construction processes–A case study. *Ain Shams Engineering Journal*, *13*(2), 101556.

Elyano, M. R. (2021). Analysis of clash detection and quantity take-off using BIM for warehouse construction. In *IOP Conference Series: Earth and Environmental Science* (Vol. 794, No. 1, p. 012012). IOP Publishing.

Hasannejad, A., Sardrud, J. M., & Shirzadi Javid, A. A. (2022). BIM-based clash detection improvement automatically. *International Journal of Construction Management*, 1-7.

He, Q., Wang, G., Luo, L., Shi, Q., Xie, J., & Meng, X. (2017). Mapping the managerial areas of Building Information Modeling (BIM) using scientometric analysis. *International journal of project management*, *35*(4), 670-685.

Hu, Y., & Castro-Lacouture, D. (2019). Clash relevance prediction based on machine learning. *Journal of computing in civil engineering*, *33*(2), 04018060.

Hu, Y., Castro-Lacouture, D., & Eastman, C. M. (2019). Holistic clash detection improvement using a component dependent network in BIM projects. *Automation in Construction*, *105*, 102832.

Hu, Y., Castro-Lacouture, D., Eastman, C. M., & Navathe, S. B. (2021). Component change list prediction for BIM-based clash resolution from a graph perspective. *Journal of Construction Engineering and Management*, *147*(8), 04021085.

Jin, R., Zou, Y., Gidado, K., Ashton, P., & Painting, N. (2019). Scientometric analysis of BIM-based research in construction engineering and management. *Engineering, Construction and Architectural Management*, *26*(8), 1750-1776.

Kermanshahi, E. K., Tahir, M. B. M., Lim, N. H. A. S., Balasbaneh, A. T., & Roshanghalb, S. (2020). Implementation of building information modeling for construction clash detection process in the design stage: a case study of Malaysian police headquarter building. In *IOP Conference Series: Earth and Environmental Science* (Vol. 476, No. 1, p. 012009). IOP Publishing.

Koo, H. J., & O'Connor, J. T. (2022). A strategy for building design quality improvement through BIM capability analysis. *Journal of Construction Engineering and Management*, *148*(8), 04022066. Utilizing building information modeling for automatic collision recognition significantly improves the design process's quality and efficiency.

Krygiel, E., & Nies, B. (2008). *Green BIM: successful sustainable design with building information modeling*. John Wiley & Sons.

Li, X., Wu, P., Shen, G. Q., Wang, X., & Teng, Y. (2017). Mapping the knowledge domains of Building Information Modeling (BIM): A bibliometric approach. *Automation in Construction*, *84*, 195-206.

Lin, W. Y., & Huang, Y. H. (2019). Filtering of irrelevant clashes detected by BIM software using a hybrid method of rule-based reasoning and supervised machine learning. *Applied Sciences*, *9*(24), 5324.

Liu, Z., Lu, Y., & Peh, L. C. (2019). A review and scientometric analysis of global building information modeling (BIM) research in the architecture, engineering and construction (AEC) industry. *Buildings*, *9*(10), 210.

Olawumi, T. O., Chan, D. W., & Wong, J. K. (2017). Evolution in the intellectual structure of BIM research: A bibliometric analysis. *Journal of Civil Engineering and Management*, *23*(8), 1060-1081.

Porwal, A., & Hewage, K. N. (2013). Building Information Modeling (BIM) partnering framework for public construction projects. *Automation in construction*, *31*, 204-214.

Rakib, F. H., Howlader, S., Rahman, M., & Bhuiyan, A. Y. (2019). Application of BIM based interoperability-A case study. *Journal of Logistics, Informatics and Service Science*, *6*(1), 106-114.

Seo, J. H., Lee, B. R., Kim, J. H., & Kim, J. J. (2012). Collaborative process to facilitate BIM-based clash detection tasks for enhancing constructability. *Journal of the Korea institute of building construction*, *12*(3), 299-314.

Tommelein, I. D., & Gholami, S. (2012, July). Root causes of clashes in building information models. In *Proceedings for the 20th Annual Conference of the International Group for Lean Construction* (Vol. 1, No. 510, p. 10). IGLC San Diego, LA.

Trebbi, C., Cianciulli, M., Matarazzo, F., Mirarchi, C., Cianciulli, G., & Pavan, A. (2020). Clash detection and code checking BIM platform for the Italian market. *Digital Transformation of the Design, Construction and Management Processes of the Built Environment*, 115-125.

Valunjkar, M. S. P. R. S. (2017). Improve the Productivity of Building Construction Project using Clash detection Application in Building Information Modeling.

Van Eck, N. J., & Waltman, L. (2014). Visualizing bibliometric networks. In *Measuring scholarly impact: Methods and practice*, 285-320. Cham: Springer International Publishing.

Van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *scientometrics*, *84*(2), 523-538.

Wang, L., & Leite, F. (2016). Formalized knowledge representation for spatial conflict coordination of mechanical, electrical and plumbing (MEP) systems in new building projects. *Automation in construction*, *64*, 20-26.

Wong, J. K., Zhou, J. X., & Chan, A. P. (2018). Exploring the linkages between the adoption of BIM and design error reduction. *Building information systems in the construction industry*, *113*.

Yamazaki, Y., Tabuchi, T., Kataoka, M., & Shimazaki, D. (2014). 3D/BIM applications to large-scale complex building projects in Japan. *International Journal of High-Rise Buildings*, *3*(4), 311-323.

Zhao, X. (2017). A scientometric review of global BIM research: Analysis and visualization. *Automation in Construction*, *80*, 37-47.

Research Article

INTERPRETING COLLINGWOOD'S ARTISTIC APPROACH THROUGH THE DESIGN PHILOSOPHIES OF ARATA ISOZAKI, JAMES CORNER AND KARIM RASHID

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Abstract This study posits a hypothesis that the essence of art can be understood through the perspectives of influential figures in architecture, planning, and design. Beginning with an analysis of Collingwood's "The Principles of Art" the paper extrapolates characteristics of the art phenomenon. Emphasizing the interdisciplinary nature of art, the study then focuses on architectural, interior design, landscape architecture, urban planning, and industrial product design. Noteworthy figures such as Arata Isozaki, James Corner, and Karim Rashid are selected to represent these disciplines, chosen for their potential depth and philosophical contributions in their works. Following the identification of the sample, discourse analysis and document analysis methods are employed to reveal the design philosophies of these figures.

Subsequently, individual concept maps representing the design perspectives of each figure are created. Finally, identified art principles and concepts are paired, and their relationships are elucidated and discussed in light of the literature. In the context of art principles, an examination of concepts determined by designers reveals significant overlaps with art, particularly in terms of possessing a unique thought process, being a creative and process-oriented experience, and relying on imagination. The study concludes that design approaches in different disciplines draw from various dimensions of art, contributing to significant richness within the design discourse.

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Introduction

The art act, nourished by the interest in the external world and the allure of the unknown, is a phenomenon subject to various interpretations over time, based on different perspectives and open to interpretation. Due to its fluctuating and probability-filled nature and the inability to delineate its boundaries, the definition of art always falls short (Bozkurt, 1995, p.9; Cemal, 2012; Ötgün, 2009, p.16). Emerging as a formation filled with possibilities, art presents itself as a mystery, constituting a creative act aiming to perceive and convey all kinds of emotions (Bozkurt, 1995, p.14). According to Tolstoy, art is the process of an individual, after mentally recreating an emotion they once felt, conveying the same emotion to others through forms determined by movement, line, color, sound, or words so that others can also experience it (Doğan, 1998, cited in Arslan & Yapıcı, 2014, p.43). In artistic activity, the subject transforms itself into a tangible form of the object (Özçınar, 1999, p.113).

The fundamental characteristic of art is its emergence as a result of a design or narrative and its connection to human creative power (Bozkurt, 1995, p.16). As can be understood from this statement, the human is at the center of art in both creation and subsequent stages. Dobbs expresses this situation by saying, "Art concerns us because it is a human-centered science and involves us" (Beken, 2007, p.25).

Due to being a social activity focused on humanity, art inevitably becomes a part of other phenomena related to humans. It can be argued that this situation turns art into an interdisciplinary phenomenon (Beken, 2007, p.5). In this context, the view that architecture, another discipline centered around humanity, is also an art has been a subject of ongoing debate. Le Corbusier addresses the relationship between architecture and art by stating, "Architecture is, above all, art; exciting relationships leading to the grandeur of Plato, reaching mathematical order, narrative, and the perception of harmony. This is the purpose of architecture. On the other hand, Frank Gehry establishes the connection between architecture and art by expressing, "Architecture is a frozen picture, a sculpture lived within" (Köse Doğan, 2016, pp.50-51). According to Friedrich Hegel, architecture is a symbolic art and holds the position of the mother of all arts. In contrast, English critic John Ruskin contends that architecture is nothing more than ornamentation (Hasol, 2011, p.1). It can be said that any work aiming to enrich such debates holds value, as it contributes complexity to these discussions.

Several studies have been identified highlighting the interdisciplinary nature of art and examining its connections with fields such as architecture, literature, cinema, and more. The literature review revealed works addressing the intersection of architectural philosophy and art (Leach, 2005; Davies, 2011; Mallgrave & Grave, 2011; Foster, 2013). Additionally, studies are exploring the links between architecture and various art forms, including painting, sculpture, music, and literature (Reuben Peters & Olabode, 2018; Al Şensoy & Özdemir Işık, 2018; Alp, 2020). However, a comprehensive exploration of the relationship between art and various disciplines in architecture and design, viewed through the perspective of the human creator, is lacking. To address this gap, the study aims to conduct an in-depth comparative analysis of

the connections between the disciplines of architecture, interior architecture, landscape architecture, urban planning, and industrial product design with art.

The Purpose and Methodology of the Study

The main aim of this study is to provide a comprehensive, multidisciplinary examination of the expansive nature of art. The hypothesis suggests that art, acting as a unifying force across diverse disciplines, can be explored through the viewpoints of seasoned professionals contributing to architecture, planning, and design. To validate this hypothesis, the study analyzes the perspectives of influential figures deeply engaged in these disciplines, namely Arata Isozaki, James Corner, and Karim Rashid. Leveraging insights from their discourses and existing works, the research aims to evaluate how these figures perceive the intersection between their respective fields and the realm of art. Isozaki, an architectural luminary; Corner, an expert in landscape architecture and urban planning; and Rashid, acclaimed for contributions to industrial design and interior architecture, have been selected as exemplary figures in the sample group, given their significant impact in their respective domains.

The selection of the sample group was based on several considerations, including the availability of ample written sources, diversified contributions in architectural, artistic, or design disciplines beyond their primary focus for a comprehensive examination, and a philosophical foundation guiding their works. The study delves into the symbiotic relationship between art and various disciplines, identifying common characteristics and exploring the convergence of artists' thoughts with the essence of art. Through an analysis of the chosen designers' perspectives on art within their respective fields, the research aims to validate the hypothesis that the phenomenon of art can be elucidated through the insights of experienced designers in the fundamental realms of architecture, planning, and design.

When investigating the relationships between art and the disciplines of architecture, planning, and design, the philosophical insights presented by Collingwood in his work "The Principles of Art" were initially considered as a criterion for defining what art is and its characteristics. The aim is to compare the observations about art made by the author in the book with the concepts representing the perspectives of the chosen designers in their respective fields, revealing the extent of the alignment between these perspectives and Collingwood's views.

In his work published in 1938, Collingwood emphasized the philosophy of art and the unveiling of the original definition of art. The criteria considered in selecting this book as a filter for the study, as outlined by Arslan (2022), include its discussion of what art is through existing theories and general opinions, its inclusion of numerous theories and diverse perspectives on art, and the author's passion for art, recognized as a significant contemporary source on the subject.

Following the observations made based on Collingwood's views on the characteristics of art, the thoughts and approaches of the selected figures—Isozaki, Corner, and Rashid—regarding their works were examined through primary and secondary sources such as interview videos, books, articles, theses, to seek answers to the research questions. Specifically, the study delved into the approaches adopted by the chosen figures in creating their works, their thought

processes regarding design, elements they emphasized, points of focus, goals, function, and how they positioned the user in their works. The document/record analysis method was used to study the designers, while their interviews were analyzed through discourse analysis.

Subsequently, the views of designers and artists on their fields were conceptualized, and concept maps were developed. In the final step, the inferences from these perspectives were compared with Collingwood's art characteristics, revealing points of convergence between art and architecture, planning, and design (Figure 1).
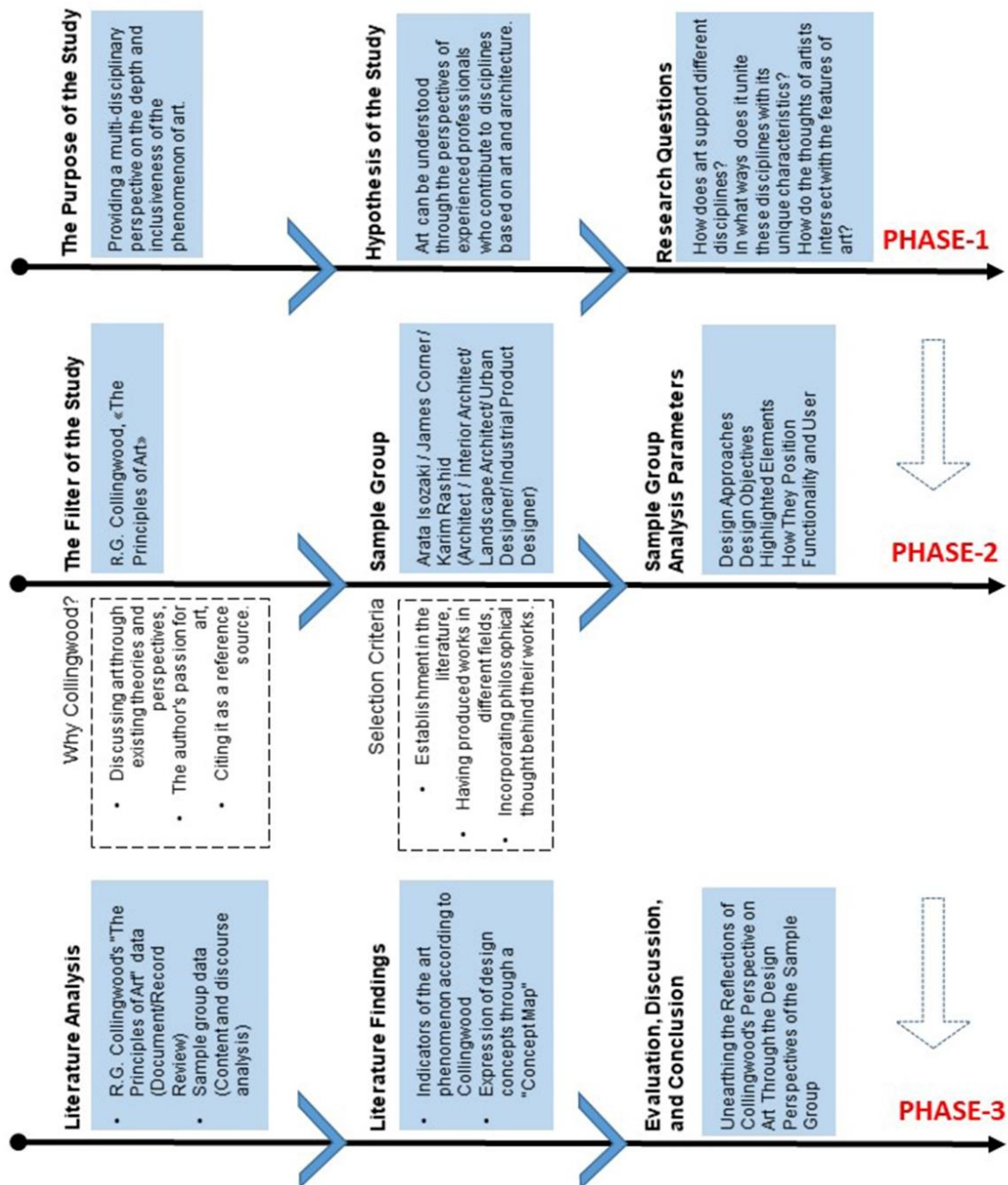

Figure 1. Research Design.

Literature Findings

The literature findings begin with extrapolations from Collingwood's views on art. Subsequently, concept maps were constructed representing Isozaki, Corner, and Rashid's perspectives on their profession. Finally, these concept maps were aligned with Collingwood's indicated characteristics of art, revealing how each designer approaches art from different facets.

Filter of the Study

In his book "The Principles of Art," Collingwood aims to define art based on existing views and theories. He argues that understanding what art is requires a clear delineation of the relationship between art and craft throughout history. Collingwood (2021) lists six fundamental characteristics of craft, highlighting that the most crucial feature distinguishing craft products from art products is that the produced item is pre-planned by the designer for a specific purpose (p.27-28).

However, Collingwood (2021) contends that art pieces are not mere instruments, unlike tools imposed for specific purposes (p.40). According to Collingwood (2021), an artist produces two things: 'internal' or 'mental,' existing solely in their mind, often referred to as an "experience." The second is 'material' or 'perceptible,' understood only in conjunction with the first. This artistic experience is personal and subjective, and artworks transport viewers to another realm by creating emotional and intellectual impacts in their inner world. Therefore, the purpose of art lies in creating, expressing, and sharing these experiences (p.47).

Collingwood emphasizes the concept of representation in art, diverging from Plato and Aristotle, contending that no art is representational since representation involves skill and a specific craft. However, stating that art is not representational does not create an inconsistency between art and representation. As an artifact, a building can be both a work of art and representational, just as an artwork can be representational. Nevertheless, what defines it as a representational work differs from what characterizes it as an artwork (Collingwood, 2021, p.55).

Collingwood's concept of representation underscores art's power to create a new reality distinct from actuality. Artworks represent the artist's experiences, emotions, thoughts, and imagination, transcending mere imitation of the real world. According to Collingwood, art goes beyond representation; it emerges as an expression of the artist's inner world, engaging viewers and eliciting responses from their inner worlds.

Collingwood posits that, unlike in craft, where the raw material is tangible, emotions serve as the raw material in art. Each artwork has a form that, unlike artifacts, takes shape not in material but in spirit and emotion. The artist's task is not to evoke emotions but to express them, requiring an awareness of the emotion. Collingwood argues that the fundamental purpose of art is expression, emphasizing the significant role consciousness can play in the expressive process (Wiltsher, 2017, p.5).

In Collingwood's thoughts on art, it is known that he embraces Croce's view of the artwork as an expression. According to Collingwood, the artist sees the artwork as a form of self-expression (Bal, 2012, p.35). While carrying the artist's expression, the artwork influences viewers' experiential worlds and contributes to the emergence of new meanings.

Artists express emotions that everyone possesses. Imagination is the ability to express these emotions. The mental states expressed by the artist belong to them but are not exclusive to them. The artist's task is to guide us to understand the same emotions in our mental lives (Collingwood, 2021, p.125). From this perspective, art should address not a particular group but all of humanity, making it universal. In addition to expression, Collingwood also emphasizes the importance of imagination, philosophy, thought, and religion in art.

According to Collingwood, art:

- Is a unique thought process: Collingwood asserts that art is not merely a sensory experience but a form of thinking. The artist engages in intellectual efforts, and the artwork is a tangible manifestation of the artist's thoughts.
- Expresses emotion: Collingwood believes art is a tool for expressing emotions. Artworks reflect the artist's emotional experiences and convey these feelings to the audience. The fundamental purpose of art is to impact and stimulate people through emotional communication.
- Requires awareness: According to Collingwood, if art is about expressing emotions, a certain level of consciousness is required for expression and understanding.
- Is a creative process: Collingwood emphasizes that art is a creative process. The artist combines thought, emotion, and imagination to create the artwork. The artist's creative process generates a new perception and understanding in the viewer.
- Expreses the inner world rather than imitating the external world: Collingwood argues that art is more about expressing the artist's inner world than reflecting reality. Artworks are products of the artist's emotional and intellectual experiences.
- Is process and experience-oriented: Collingwood emphasizes that art is not solely result-oriented; the creative process and the viewer's experience are equally important. The experience during the creation and perception of the artwork is a fundamental aspect of art.
- Is a product of imagination: According to Collingwood, imagination is a creative force in art, allowing artists to delve into the depths of their inner worlds. Using imagination, artists seek to convey their experiences, emotions, or thoughts to the audience.
- Should be associated with philosophy: Collingwood suggests that art and philosophy are disciplines aimed at understanding and expressing human intellectual and emotional experiences. Both contribute to efforts to comprehend and express the inner world of humans.
- Should be evaluated in context: Collingwood argues that for a complete understanding of a work of art, one must comprehend not only aesthetic values but also the historical, cultural, and social conditions under which the artwork emerged.

- Creates a Cathartic Effect: Collingwood describes the cathartic effect as a relief and purification, where an artist, aware of an emotion but unable to express it, experiences a sense of helplessness. Expressing that emotion leads to relief and relaxation, replacing the suppressed feeling.

- Stimulating in Nature: According to Collinwood, when an artist influences viewers to make them feel enriched, a sense of gratitude is elicited. Thus, the artist's primary purpose is to evoke a specific emotional response in people, encouraging them to engage in intellectual activities.

- Pleasurable and Entertaining: Collingwood notes that artworks, by diverting viewers from the busyness of life, transform into a means of entertainment.

- Imagination-Based Experience: Collingwood asserts that enjoying art is not merely a sensory experience but an imagination-based one. According to him, art is not just about the pleasure derived from sensory elements; it is also an experience rooted in the imagination provoked by these elements. Viewers should integrate with the artwork, not just through seeing, hearing, or touching but by engaging in imaginative experiences.

All these views have been utilized as a guiding filter in presenting analyses of how the selected artists and designers incorporate art into their respective fields within the framework of the study.

Arata Isozaki

Isozaki, an architect, urban planner, educator, and theorist, began his career by working alongside Kenzo Tange, often regarded as the father of post-war Japanese architecture (Goodwin, 2019). Reflecting on the impactful decision to become an architect after the devastation of World War II, Isozaki stated:

"Everything was in ruins; there was no architecture, buildings, or even a city. …Thus, my first architectural experience was the void of architecture, and I began to contemplate how people could rebuild their homes and cities" (URL-2).

Isozaki defines architecture as meaning, theory, and profound thinking, emphasizing that it extends beyond building design to reveal hidden aspects and encompass deep understandings (Isozaki, 2019). Palladio played a crucial role in shaping Isozaki's architectural understanding when he sensed a void in Palladio's structures, leading him to adopt a design approach centered on the void (Isozaki, 2010; Isozaki, 2019). Isozaki integrates the Japanese cultural philosophy of "Ma" into his designs, characterizing it as the spaces between objects, intervals between sounds, voids between forms, or pauses between movements, representing essential time and space for life's continuity (Arıbaş, 2021). Isozaki draws inspiration from Surrealism, notably Constantin Brancusi's Infinite Column idea (Lehmann, 2017). In his book "Japan-ness in Architecture," Isozaki references Sutemi Horiguchi's definition of void in "Style without Style," emphasizing that void is specific, concrete, and not fixed, perceived only by humans. Isozaki further notes that users can grasp architectural voids solely through bodily intuition (Isozaki, 2006).

In its early stages, the *City in the Air*, designed by Isozaki, resembles the remnants of temples in the Doric order from ancient Greek architecture. Despite expressing sympathy for the ideas and theories of the Metabolist movement that emerged in Japan during that period regarding new urban forms, Isozaki emphasized the limited utility of this approach, choosing to pursue his avant-garde path (Isozaki, 2009; Lehmann, 2017; Isozaki, 2019; Arıbaş, 2021).

Isozaki's profound knowledge of architectural history facilitates easy connections between his designs and the past. His keen interest in Renaissance and Classical architects and extensive architectural theory provide a foundation for using various historical references in his work (Lehmann, 2017). Isozaki acknowledges that his fascination with ancient architecture has taught him valuable lessons about architecture. He views buildings not as entities defined solely by materiality but as formations encompassing social and historical contexts, meant to be continually interpreted and reinterpreted, resembling texts (Isozaki, 2009).

Isozaki perceives architectural structures as a realm where thoughts, subjects, or ideas interact to create events and constructions. He emphasizes this to convey that architecture goes beyond mere buildings, each part having its narrative (Isozaki, 2009). Isozaki adopts the idea that his structures, rather than having a social narrative, should consist of pure forms that users perceive (Lehmann, 2017). His creative use of rigid geometric forms has made a dramatic impact not only in Japan but also in the international art and architecture world. Renowned architect Robert Venturi admired Isozaki's return to fundamental forms, praising his remarkable skill in detailing the combinations of materials and forms (Giovannini, 1986).

Isozaki, hailed as the "Emperor of Japanese Architecture" by Tadao Ando, is renowned as the first Japanese architect to work globally. Designing 100+ public and cultural structures in countries like Japan, Spain, the United States, China, Italy, and Qatar, Isozaki meticulously evaluates each project based on context and specific needs. His commitment to design diversity is evidenced in his statement, "My desire is always to create a difference... to evaluate architectural style as a solution, designing according to the current situation and environment without adhering to a single style" (Arıbaş, 2021; Lehmann, 2017).

Isozaki, ahead of his time, facilitated a global dialogue between East and West, producing a broad spectrum of works from traditional to technologically advanced spaces. Beyond architecture, he is known for his contributions in various fields, such as furniture and fashion design, philosophy, visual arts, music, and the film industry (Arıbaş, 2021; Gür, 2019).

Describing himself as "Post-Modern, not post-modernist," Isozaki designs structures that depart from traditional Japanese aesthetics but carry the concealed humility of Japanese culture (Giovannini, 1986). Isozaki is an architect rooted in history, conveying symbolic messages and embracing post-modern freedom.

Frampton categorizes Isozaki as both architect and artist, accentuating artistic intentions beyond techniques and structures (Cho, 2020, p.1). Frampton asserts the need for a design narrative, highlighting the intimate connection between architecture and art. Isozaki, influenced by ancient architecture, Le Corbusier, and Louis Kahn, merges primary geometric forms with

organic lines. He has attained global recognition as an architect by referencing history, bridging East and West, and pursuing perfection.

Isozaki's design philosophy is summarized through his views and existing literature. Conceptual equivalents are provided in Table 1, and the designer's frequently used key concepts are indicated by circle sizes. Considering the relationships between these concepts, a conceptual map is created (Figure 2)

Table 1. Conceptualization of Inferences.

| Concepts	Inferences Drawn from Sources	Concepts	Inferences Drawn from Sources
▽	▽	▽	▽
Philosophy	In a simple sense, influenced by the philosophy of time and space, the "Ma" philosophy (Arıbaş, 2021).	Void-Time	"Void appears only when perceived by humans, hence it is always specific, concrete, and not fixed" (Isozaki, 2006).
Context	"My desire is always to create a difference. To evaluate architectural style as a solution, designing according to the current situation and environment without adhering to a single style." (Lehmann, 2017)	Culture	Designs reflect a humble concealment of Japanese culture, despite deviating from the traditional Japanese appearance (Giovannini, 1986).
Historical Nourishment	Isozaki's deep knowledge of architectural history enables easy connections between his designs and the past (Lehmann, 2017).	Inspiration	Influenced by ancient architecture, Tange, and classical architecture (URL-1).
Thought	Architecture is a product of revealing hidden things and profound thoughts. Isozaki evaluates architectural structures as an interaction of thoughts, subjects, or ideas that shape events and structures (Isozaki, 2019).	Form	"Isozaki's return to basic forms impressed me. His remarkable skill in detailing the use of combinations of materials and forms is something admirable to me" (Venturi, n.d. cited in Giovannini, 1986).
East-West Synthesis	Influenced by ancient architecture and Italian architect Palladio, Isozaki's structures reflect the impact of both Japanese culture and the concepts he admires (URL-1).		
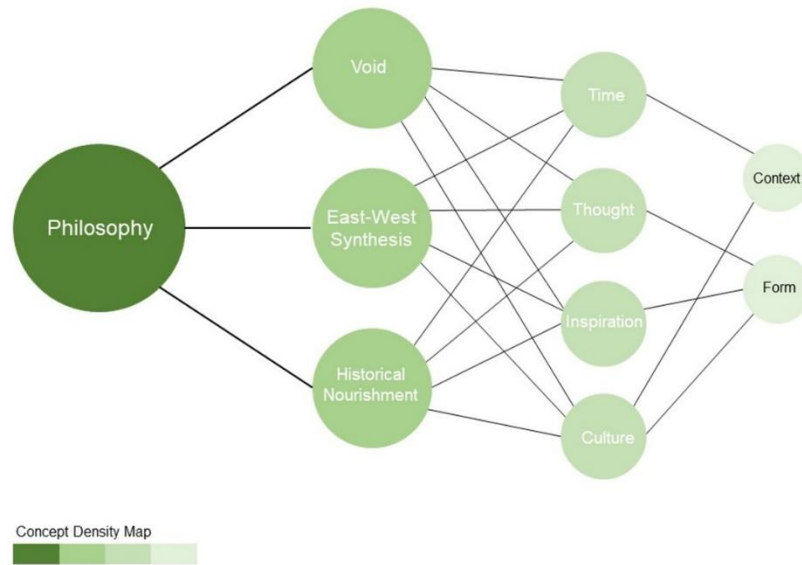
Figure 2. Concepts Shaping Isozaki's Design Philosophy.

James Corner

Corner, a distinguished landscape architect and theorist, focuses on innovative approaches to his field and has earned numerous awards, becoming the first landscape architect to achieve many of these accolades (URL-8). He defines landscape architecture as the "planning and design of spaces under the sky" (URL-2), valuing urban landscapes as vital components in design perception.

Corner explores the concept of "place" in planning and design, aligning with landscape architecture's principle that design should reflect regional culture. He asserts that the essence of landscape architecture is in planning spaces under the sky. Corner highlights design's transformative power through the example of the High-Line project, where designers converted an abandoned area into a well-designed space, emphasizing their role in turning negatives into positives (URL-2).

Corner draws inspiration from philosopher Bachelard's concept of "Intimate Immensity" in his adoption of the term. Bachelard (1958) suggests that "immensity is within ourselves," signifying an internal expansion rooted in the desire to break free from life's constraints. Corner's embrace of this concept reflects an architectural approach aiming to explore the physical boundaries of space and its emotional, symbolic, and intellectual depths. "Intimate immensity" encompasses a design philosophy concerned not only with the external features of space but also with its internal meanings and sensory experiences.

Corner stresses the need to redefine landscapes' intricate, hybrid structure concerning their relationship with culture. He sees landscape as a metaphor embodying complexity and plurality on a grand scale. Contrary to being the antithesis of the city or a picturesque backdrop, Corner contends that landscape is not merely a preserved resource but a dynamic process or activity, transcending conventional nomenclature (Corner, 1999, pp.2-3-4 as cited in Bingöl, 2021, p.607).

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Corner envisions dynamic landscapes shaping cities over time. In his Fresh Kills Park design, the landscape's formative influence on the terrain takes precedence: "... the terrain presents a novel public-ecological landscape potential, governed by time and process rather than space and form, nurturing human creativity from biology" (Field Operations 2002,7). Corner defines landscape as a performative force shaping the entire terrain, evolving into an operational tool (Bingöl, 2020, p.608). As a tool, landscape signifies a process-focused design enabling human activity, flexibility, and variability over time.

Corner highlights ecological, cultural, and social values in his designs, emphasizing design's transformative and imaginative aspects. His various projects, including the Detroit transformation proposal, New York's High-Line Project, and the Fresh Kills project for repurposing a former waste site, showcase these approaches. The High-Line and Fresh Kills projects are exemplary works sustaining cultural elements in urban settings while prioritizing the natural environment (Çabuk et al., 2013, p. 476). Corner's philosophy is encapsulated in this statement:

"Direct physical experience through visits and exploration is always richer and deeper than merely looking at images. There are so many historical, contemporary, natural, and designed elements that limiting examples is impossible. Visit as much as possible; open your eyes and senses. Landscape experiences delve deep into the human spirit: enduring, enriching, and highly satisfying" (URL-3).

The design integrated with nature is expressed in inspiring people and giving meaning to the design through visitors' experiences, stating that it goes beyond visuals and penetrates the depths of the soul. In an interview, Corner discusses the palpable and experiential nature of High-Line's post-industrial character, even after its transformation.

As a result, Corner emphasizes ecological sustainability and the preservation of the identities and history of workspaces in his works. Additionally, he advocates for design as an element that triggers imagination and heals spirits by integrating with people and their lifestyles.

The findings regarding Corner's design philosophy are summarized based on his views and writings, and conceptual equivalents (Table 2) and a map of concept usage density (Figure 3) are provided.

Table 2. Conceptualization of the Inferences.

Concepts	Inferences Drawn from Sources	Concepts	Inferences Drawn from Sources
Philosophy	Based on the concept of intimate profundity, it believes in the boundless nature within ourselves. (URL-12)	Concept of Place	"Landscape architecture is fundamentally concerned with the planning and design of space under the sky. One of the phenomena landscape architecture deals with is the concept of place." (URL-3)

Contemporary Developments	"In the past 20 years, the events in various societies around the world have been very inspiring to me. It has been a period of increased freedoms, openness, and, of course, technological developments in both communication and media." (URL-4)	The idea of Being Bold	"To be courageous means to be ambitious. We should encourage students to think beyond conventional boundaries, to think big, to try innovative and experimental ideas, and to push boundaries. Because they are essential in seeing what is possible." (URL-4)
Communication	"Asking people what they want and then providing it is not a simple matter. It is a project that requires great skills in communication, vision, and authentic dialogue." (URL-2)	Thought	"As designers, I believe that we add immense optimism and faith by transforming things that may be perceived negatively into something positive." (URL-2)
	"As landscape architects working in various parts of the world, we need to enhance our capacity to listen, be open to locality, local culture, and ecology to create contextual, meaningful places." (URL-3)	Enhancement and Triggering Imagination	The concept of 'Lifescape' is the starting point, aiming to improve and renew the extensive environmental rehabilitation of the area. It focuses on preserving both ecosystem health and biodiversity in the ecological process while enhancing the spirit and imagination of the new park's users. (URL-2)
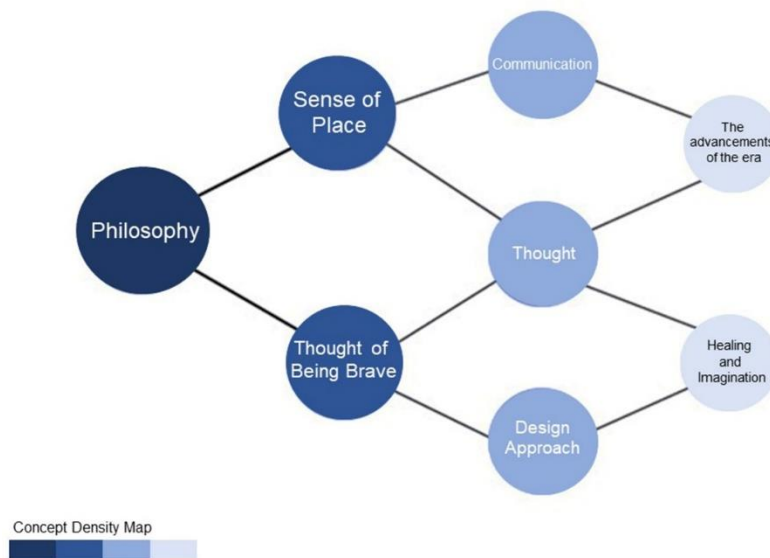
Figure 3. The Concepts that Form Corner's Design Philosophy.

Karim Rashid

Karim Rashid is a prominent designer in various fields, such as furniture, lighting, surface design, and brand identity. Describing himself as a design enthusiast, cultural shaper, and plastic poet (URL-5), the artist showcases diverse and unique designs using colors and different materials. He establishes an original design line in his interior designs by incorporating intense colors, textures, and geometric forms. Giving importance to the design process, he uses colors to shape spaces and influence people. Rashid, who states, "Nature never has sharp lines" (URL-8), incorporates curved and oval forms throughout his designs.

The designer, using the expression, "In the early days of my career, I thought the greatest reward I could achieve would be to have my work in a museum collection. But I realized that seeing my own designs when entering someone's home is much more exciting" (URL-5), defines the desire to enrich the human experience and enhance life aesthetically, emotionally, and experientially.

Rashid, embracing a pluralistic approach in his designs, believes design should reach everyone across cultures. He operates on the idea that design is a facet of art, emphasizing the need for design to possess aesthetic qualities, making life easier and contributing to improvement.

When asked about design, Rashid states, "Design is every aspect of our life experience. Design touches everyone. My goal is to inspire people with my designs and words, push the boundaries of design, and create inspiring objects" (URL-5). He suggests that design products should be understood as entities that enhance emotional, physical, economic, and political aspects of life and include enjoyable and stress-reducing objects and spaces.

The relationship between design and life is emphasized, highlighting design's role in benefiting and inspiring various aspects of life. Rashid underscores the need for design to be reflective and adaptable to the current era. "Design is not limited to visuals; it touches all our senses and is a culmination of life experiences." He views design as a form of communication with our emotions, evident in the uniqueness of his creations. Embracing contemporary approaches, Rashid heavily incorporates technology into his designs, imparting a sense of the space age (Şpat, 2017, p.70). Additionally, he adopts artificial textures, integrating them into interior designs by manipulating surfaces, wall coverings, and textiles (Kılıç, 2020, pp.863-864). This approach showcases Rashid's adept use of texture as a design tool in shaping interior spaces, with digital production techniques used to create diverse patterns and colors. The artist's incorporation of technology into applications and design processes is evident in his works reflecting contemporary life.

A summary of design insights derived from Karim Rashid's personal views and writings has been provided, along with conceptual equivalents (Table 3) and a map illustrating the density of concept usage (Figure 4).

Table 3. Conceptualization of Inferences.

Concepts	Inferences Drawn from Sources	Concepts	Inferences Drawn from Sources
▽	▽	▽	▽
Originality	In my journey, I've always pursued originality. Sometimes unpredictability, sometimes randomness creates your uniqueness. (URL-5)	Inspirational	Design is every aspect of our life experience. It touches everyone. My goal is to inspire people with my designs and words, push the boundaries of design, and create inspiring objects. (URL-5)

Design for Everyone	"In the early days of my career, I thought the greatest reward I could achieve would be to have my work in a museum collection. But I realized that seeing my own designs when entering someone's home is much more exciting." (URL-5)	Recyclability	Known as the "Prince of Plastic," I use a lot of plastic in my designs because it's a material with fantastic qualities - durable, malleable, and can be very comfortable. Using plastic also makes my designs more accessible in the market. (URL-7)
Process	Rashid believes design is a process, not just an outcome, where inspired ideas nourish this ongoing process. (URL-10)	Technology	"I develop my ideas first, then bring them to my team, and we try variations using 3D renders." (URL-7)
Color	"Pink; energetic, sparkling, captivating, and a mimicry of the masculine world dominating our constructed landscape. Every mood, every person has many shades of pink." (URL-6)	Durability	"I believe every artist, designer always wants to contribute to culture. I have always been obsessed with making a real impact on people's lives." (URL-7)
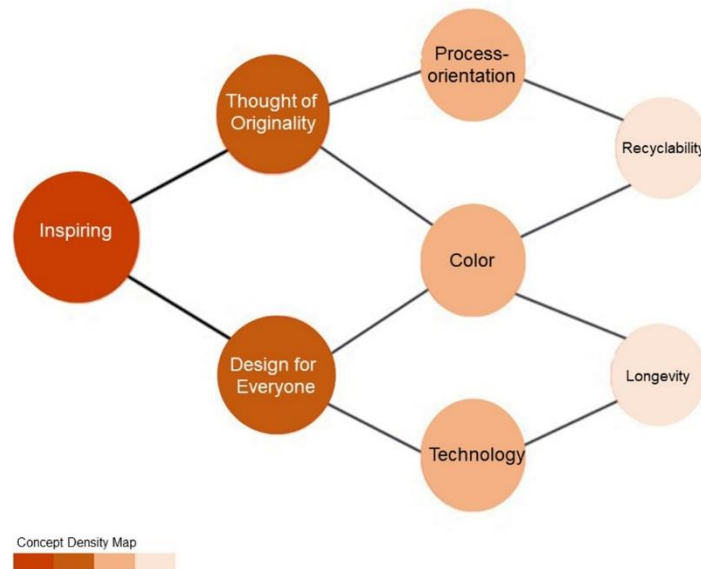
Figure 4. Concepts Shaping Rashid's Design Philosophy.

Evaluation, Discussion, and Conclusion

The discourses of notable figures with successful contributions to the literature, such as Arata Isozaki, James Corner, and Karim Rashid, were examined along with research findings. Their design philosophies were elucidated through document analysis.

Subsequently, conceptual maps were individually created for each name, representing their design approaches. Finally, identified art principles and concepts were correlated through graphic arrangement (Figure 5, Figure 6, Figure 7). The relationships between them were explained and discussed based on the literature.

Derived from Isozaki's design philosophy rooted in the "Ma" philosophy, the concept of "philosophy" aligns with Collingwood's principles of art: "Involves a unique thought process," "Requires awareness," and "Should be associated with the philosophy" (Figure 5).

Figure 5. The Matching of Isozaki's Design Concepts and Art Principles.

Art, architecture, and philosophy collectively explore diverse dimensions of human experiences. In "On Architecture," Vitruvius conte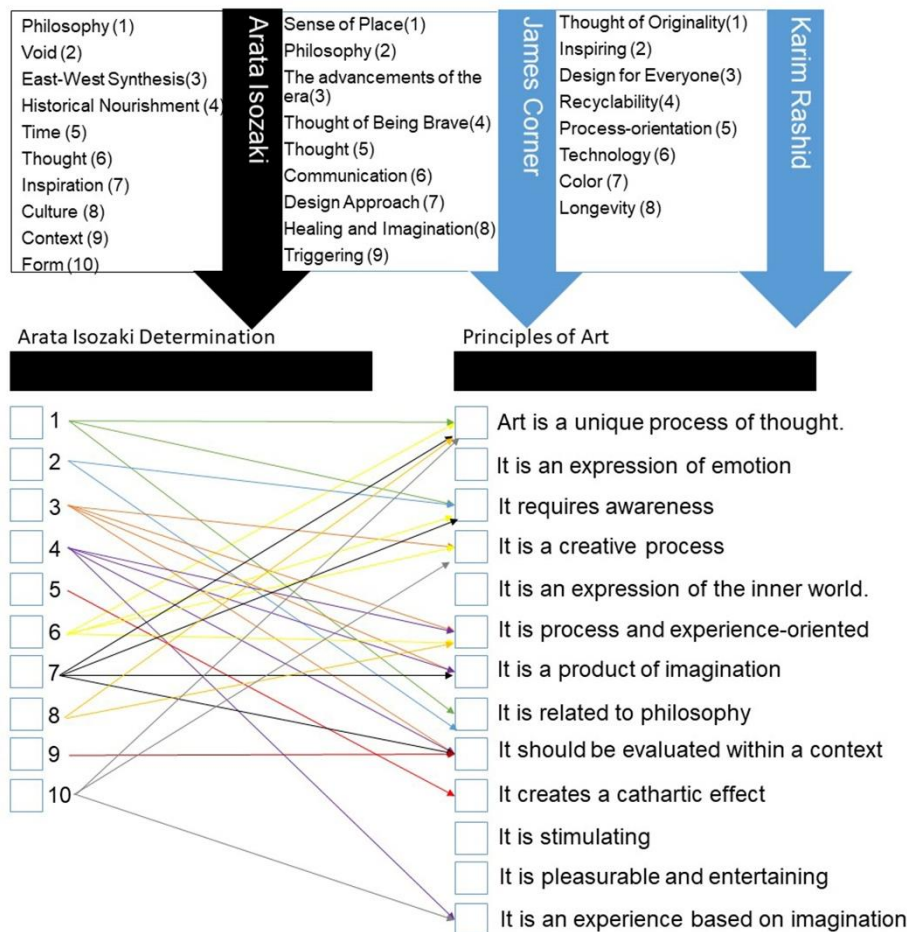nds that philosophical knowledge enhances architects, underlining the intrinsic connection between architecture and philosophy (Vitruvius, 2021, pp.26-27). Linking architecture with philosophy facilitates nuanced solutions to spatial challenges, encourages interpretative possibilities, and deepens comprehension of the human-environment dynamic, expanding the architect's perspective (Örnek, 2015, p.1328). Reflecting on these ideas and Collingwood's insights into art and philosophy, it is arguable that art and architecture share parallel philosophical foundations. Isozaki's incorporation of the "void" concept, influenced by the "Ma" philosophy, further illustrates the symbiotic relationship between architecture and philosophy.

A point of convergence between Isozaki's architectural philosophy and Collingwood's art perspective lies in the notion that art involves a "unique thought process." Since architectural products are designed to meet individual and societal needs, the process begins with thoughts and subjectivity (Beken, 2007, p.7). For instance, American architect and art collector Barry

Berkus emphasizes starting with thoughts and observations when creating an architectural product. He states that these thoughts transform into surfaces and volumes alongside observed artworks, becoming symbols and actions in the design process. Berkus contends that all visualizing artists use parallel techniques, asserting connections between these fields (2000, p.IX).

Collingwood's principle, "requires awareness," aligns with another feature associated with the philosophy concept. According to Pallasmaa (2016), architecture is an art form dealing with existential and metaphysical questions about human existence (p.58). Each art form develops metaphysical and existential thinking with its unique environment (Pallasmaa, 2016, p.57). The thought process involved in this development requires a certain level of awareness. In this context, it is evident that developing products in the fields of architecture and art demands a specific level of awareness.

Based on Isozaki's architectural philosophy, the concept of "void" stands out. Rooted in the teachings of the "Ma" philosophy, the void aligns with Collingwood's principles of art, mainly "Requires awareness" and "Must be associated with philosophy." Representing pause and repose in Japanese teachings, Isozaki incorporates the void in his structures. Void holds significance in architecture, philosophy, science, and art (Özkaraca & Halaç, 2021, p.338). Dating back to the 6th century BCE, philosopher Lao Tzu asserts, "The truth of a building lies not in its floors and walls but in the voids within" (Hasol, 2021). Beyond its functional aspects, including aesthetic, emotional, and symbolic meanings enhances the depth and richness of the design. Thus, the role of void in the design process extends beyond creating empty spaces; it holds the potential to imbue the structure with meaning and character (Erdem Küçükşahin, 2022, p.81).

Isozaki advocates for a balance between modernism and tradition in art and architecture. He contends that harmony must be struck between the teachings of the past and the innovations of the future. Isozaki not only embodies the elevated spirit of contemporary Japanese architecture but also incorporates the dilemmas he faces into his designs. These dilemmas revolve around reconciling his Japanese and Western identity, establishing a balance between tradition and originality, and dealing with contrasts inherent in established orders (Giovannini, 1986). In this context, the designer's architectural philosophy is evaluated through the concept of "East-West synthesis." This concept aligns with Collingwood's principles of art: "It is a creative process," "It is focused on process and experience," "It is a product of imagination," and "It should be evaluated within its context." Design is fundamentally a cognitive process, transforming into a design product under the influence of creativity (Önal, 2011, p.155). According to San, creativity is shaped not only by cognitive abilities but also by sensations, perceptions, and the faculty of imagination, among other factors and their connections (cited in Önal, 2011, pp.156). Imagination is the ability to create a mental idea as a precursor to producing a design product. Consciousness and imagination synthesize in the mind, influenced by the designer's or artist's lived experiences, to form the design product (Özrili, 2021, p.100).

Auguste Perret defines architecture as a spatial art expressed through structure (Hasol, 2011). Architecture is not only a field of knowledge that analyzes and researches existing structures but also a design activity that develops standard perspectives for structures to be built in the future. Consequently, individuals, when interacting with architectural objects, experience these objects from various perspectives based on their locations, defining various integrities on the built environment (Koçyiğit, 2022, p.775). This statement, in parallel with Collingwood's artistic perspective, supports the idea that architecture should be evaluated in conjunction with its context. Venturi argued that the context in which a structure is situated is the factor determining its meaning; therefore, any change in context would lead to a change in meaning (Alagöz & Güner, 2022, p.145). The establishment of the context for an architectural object is determined by visitors' previous experiences, cultural backgrounds, and approaches developed within their beliefs, similar to the way it occurs with art objects (Koçyiğit, 2022, p.775).

Another concept derived from Isozaki's architectural approach, "drawing inspiration from history," parallels art's characteristics of being "process and experience-oriented," "a product of imagination," and "an experience based on imagination." Vitruvius (2021) argued that architecture and history are intertwined, emphasizing the importance of history for architects in knowing architectural history and their works (p.24). Isozaki has stated that his designs drew significant influence from ancient architectural remnants and Palladio. To utilize this influence in his structures, he needed a knowledge base of those historical periods and the ability to associate this knowledge with the respective eras in his mind. This is where the faculties of imagination and imagination-based skills emerge. Like other art forms, architecture demands imaginative abilities. Imagination guides architects to contemplate a space's meaning, aesthetics, and utility. This emphasizes that architecture is not merely a structure but also an expression of culture.

Another concept in Isozaki's architectural design philosophy is "time." The architect, who explores the concept of time derived from the Japanese cultural philosophy of "Ma" in his structures, is evaluated within the framework of Collingwood's indicated art principles, particularly the judgment that art is "evaluated in context." Viewing architectural structures as legacies left to time, the architect considers cultural, historical, and social contexts. By limiting boundless space and infinite time, architecture makes it habitable for people (Pallasmaa, 2016, p.22). Therefore, time is a significant parameter for understanding and perceiving space in architecture, playing a crucial role in realizing architecture. In this regard, time is considered in both art and architectural products when evaluating contexts.

Derived from Isozaki's views, another concept is "thought," which is associated with art principles stated by Collingwood: "It is a unique thinking process," "It requires awareness," "It is process and experience-oriented," and "It is an experience based on imagination." It is well-known that there is always a thought behind Isozaki's structures. Like Derrida's perspective, which asserts that architectural structures must carry meaning and exist through this meaning (2005, p.308), this situation also requires awareness and experience. Moreover, adapting history to the present is also a product of imagination.

Another concept identified in the readings is "Inspiration," which is associated with the art principles of art being "a unique thinking process," requiring "awareness," and being "evaluated with context." Architects draw inspiration from nature, art, various movements, when designing their structures. Therefore, inspiration in architecture requires a level of awareness. The relationship between the inspired source and the design product is evaluated with context.

In Isozaki's architectural approach, another concept with noticeable influences is "culture." Although Isozaki is influenced by ancient architecture, traces of the Japanese culture in which he was raised are always evident in his works. Architecture and culture cannot be thought of separately. Architecture can be a direct expression of the cultures of individuals or societies because spaces are designed according to the needs of people. Simultaneously, reflecting a culture in architecture helps preserve society's integrity (Gujuluva, n.d.). This situation correlates with Collingwood's assertion that art should be "evaluated in context." The reflections of a culture in architecture, shaped by the lifestyles, beliefs, and habits of societies, should be assessed within the context of that culture.

Isozaki emphasizes the cultural, social, and historical context in his structures. In this context, another identified concept can be considered as "context." This concept aligns with Collingwood's perspective on art, stating that it should be "evaluated in context." As mentioned earlier, architecture is not just the process of creating a physical structure but also the process of understanding, evaluating, and adapting to the surrounding context (Derrida, 2005, p.308). Similarly, works of art should be approached within the framework of cultural, social, communal, and historical values.

Venturi expresses that Isozaki is influenced by how he uses primary forms (cited in Giovannini, 1986). Isozaki, with the influence of Japanese culture, stands out for using pure forms in his structures. The concept of "form" prominent in the artist's architectural style is associated with Collingwood's views on art: "Requires awareness," "Is a creative process," and "Is an experience based on imagination." Creating a form in architectural terms requires a particular awareness and is a creative act as a product of imagination.

Corner, another figure in the sample, has embraced the concept of "Intimate Vastness," believing that vastness exists within the individual. Considering that vastness is seen as an internal process, this brings awareness. Based on this, intimate vastness is evaluated as an emotional and intellectual process, aligning with Collingwood's assertion that art is "related to philosophy" (Figure 6).
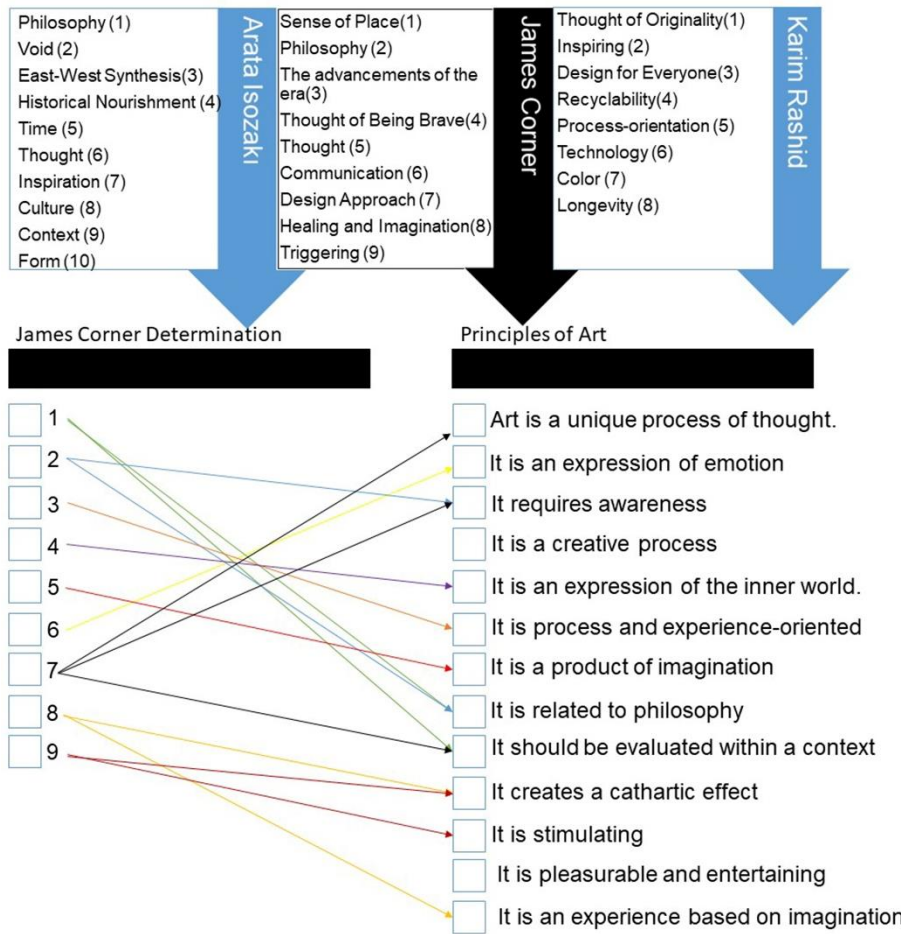
Figure 6. The Matching of Corner's Design Concepts and Art Principles.

Collingwood's discourse on art includes the idea that art can be evaluated in the context. This notion suggests that an artwork, in addition to its aesthetic aspect, should reflect the cultural, historical, and social dimensions of the era it belongs to, and it can only be understood in this way. Corner, with his concept of "place," emphasizes that every space under the sky can be designed, and while doing so, it is crucial to continue reflecting the culture of the surrounding environment without deviating from its identity, ensuring its preservation. Corner's perspective on "place" aligns with Collingwood's idea that "art is evaluated in context." The artist's perception of the visual world involves a process of effortful shaping (Kara, 2011, p.2). Creating an artwork also encompasses a period covering the artist's perception and the time of production. Corner mentions the various gains he has acquired from the events and thought systems that have taken place in the world over time and states that various experiences inspire him in this process. John Dewey defines experience as a concept that brings about the interaction between the subject and the object, being formative and constructive (Eroğlu, 2017, p.18). Dewey argues that experience enhances the power of initiative by arousing curiosity in the individual, thus becoming a driving force (Eroğlu, 2017, p.215). Thus, Corner's thoughts on experience and process relate to Collingwood's principle that "art requires a process and experience."

Corner emphasizes the importance of the belief in freedom and courage for individuals to explore what they can achieve and considers "being free" a crucial concept. According to him, artists can create art with freedom and creativity by presenting themselves authentically (Bingöl, 2011). Adorno suggests that when individuals turn towards freedom, they encounter art, stating, "The idea of freedom is tied to individuality. Primarily, the concept of freedom has meaning for us as individual freedom, i.e., the freedom of the individual to act on his responsibility, autonomy, act on his initiative, and decide for himself..." (2006, cited in Sütçü, 2015, p.278). Adorno explains the meaning of freedom as it relates to individuality. The artwork also finds its meaning when it emerges from an individual with a free mind and idea. The notion that artists can boldly express their inner self aligns with Collingwood's principle that "art is the expression of the inner world and is based on imagination."

Collingwood's definition and characterization of art include another idea regarding art's "catharsis effect" and its healing aspect. Art can regulate human life, enabling individuals to perceive the external world differently and contributing to mental and sensory improvements (Ataseven, 2021, p.518). Corner refers to the High-Line project as a transformation project that turns a neglected place into a space capable of creating positive impacts through belief and optimism, leaving good impressions on people (URL-2). For him, purging the negative and replacing it with positive thoughts is a healing power.

Freud likens the artist to a child at play, combining their toys with their imaginary worlds. Similar to how children merge their fantasies with playthings, the artist reflects their imaginative world in their creations. Corner argues that effective communication with people involves understanding their desires and influencing their broader thinking and imagination. This perspective aligns with Collingwood's principle that art has a "stimulating quality, triggering the imagination."

In the Corner design approach, creating meaningful projects that align with, preserve, and sustain local characteristics is crucial. This perspective resonates with Collingwood's idea that art should be contextually connected. Examining the periods in which artists lived allows us to understand the emotions and thoughts of the artist and the society they belonged to (May, 2003 & Satır, 2011, p.14). Art is a formative process in which emotions and thoughts are conveyed (Özkül & Kaya, 2022, p.296). Within this process, artists are influenced by the atmosphere of their time, reflecting this influence in their works (Bingöl, Çevik & Kayahan, 2020, p.14). Therefore, it can be argued that a designer's awareness should be high, reflecting not only aesthetics but also the identity of their environment and the norms of society.

In his designs, Rashid, the last figure in the sample, has adopted the principle of making architectural products, especially those using plastic and recyclable (Figure 7). The possibilities of materials and techniques in art applications are expanding, leading to a focus on sustainability and recycling, with plastic as an alternative material (İba, 2023, p.2). Plastics used as an alternative material have been transformed into practical materials and evolved into a medium for artists to create art (Sevim and Tan, 2020, p.163). This alternative approach has added a different dimension to artworks, contributing to the artist's subjectivity and expanding expressive possibilities (Ağatekin, 2012, p.1).

Over time, Rashid has recycled various materials he has used and experienced, developing a distinctive style while emphasizing the importance of recycling designs within specific processes to be reclaimed without fading over time. This perspective aligns with Collingwood's principle that art "requires process and experience." Another approach in line with this principle is Rashid's utilization of technology to bring his design ideas to life. The relationship between art and technology has progressed proportionally throughout history. As technology becomes integrated into life, production methods and meaning dimensions change. The artist has begun using technology to produce artistic works that would be challenging to create otherwise, treating technology as a new form of expression (Türkmenoğlu, 2014). The active presence of technology in various aspects of life, including design, can be employed, as Rashid suggests, to create diverse variations, requiring experience and a specific process.
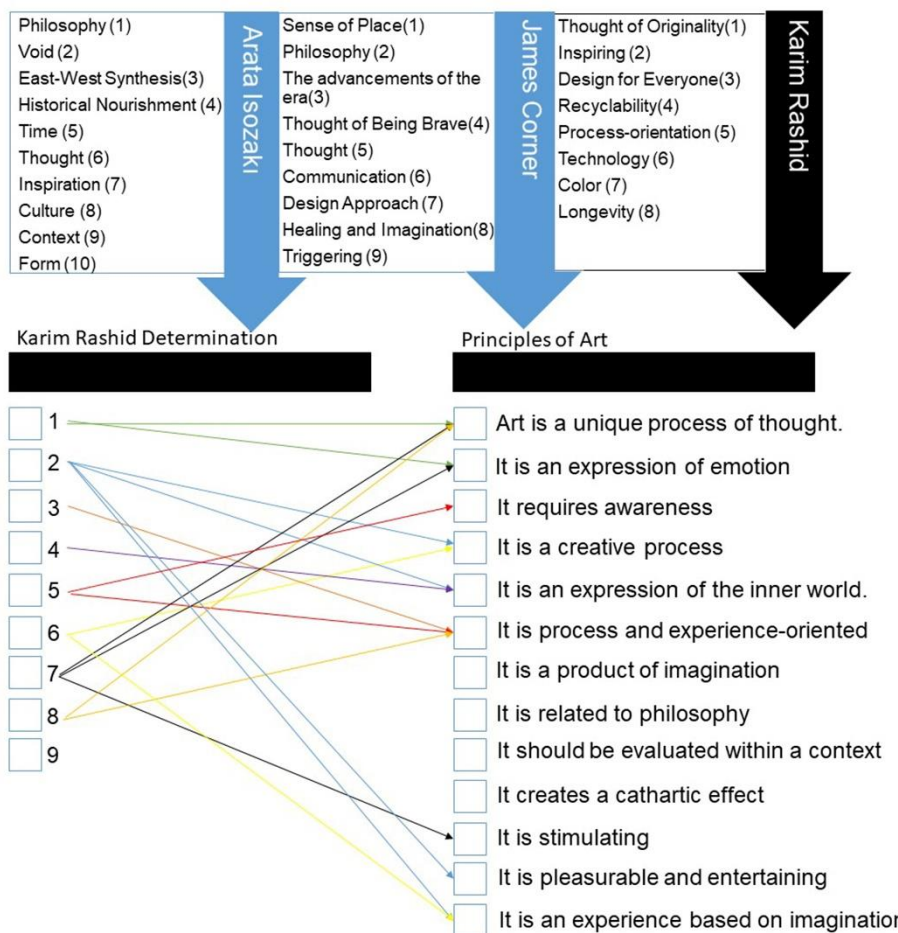
Figure 7. Matching Concepts of Rashid's Design Approach with Art Principles.

Another of Collingwood's principles of art is having distinctive design thinking. Art can achieve uniqueness only by freely reflecting and expressing one's feelings. Rashid, who believes that uniqueness can be captured through randomness and free thought, aligns with Collingwood's principle.

Rashid argues that design will evolve through experiences, creating inspiration and generating pleasure. He suggests that design can be for everyone, emphasizing that the ability to create

art for everyone is a developed experience within a process formed by experiences. This notion aligns with Collingwood's assertion that "art is a creative, pleasurable process."

Rashid's use of the color pink in his designs, aimed at adding energy to the environment, can be associated with the principle of art being pleasurable and entertaining. The concept of color is intertwined with human interaction and emerges as a powerful expressive tool (Doğru et al., 2021). In various fields, such as art and design, colors serve as a means for artists to express their emotions (Canbolat and Öner, 2019). Goethe perceives color as a source of pleasure for humans and, when considered part of art, describes it as the most effective aesthetic tool (Goethe, 2013, cited in Koca, 2019). With this perspective, individuals identify with colors, and color becomes integrated with the eyes and the soul.

Using color to express emotions and thoughts is also related to Collingwood's view that art involves a "distinctive mode of thought and emotional expression." Additionally, forming a distinctive thought mode can bring the artist permanence. Rashid describes contributing something to the cultural climate and creating a lasting impact on people as a path to permanence for artists.

A classification has been made, based on the principles of art derived from Collingwood's views and the approaches of the designers in the example, to make a general inference about the relationship between the concepts identified through the designers' approaches to design (Table 4).

Table 4. Classification of Art Principles.

Artist	Product	Visitor
▽	▽	▽
• Unique thought process. • Requires awareness. • A creative process. • Expresses the inner world. • Process and experience. • Product of imagination. • Experience based on imagination.	• Expression of emotions. • Should be associated with philosophy. • Should be evaluated within context.	• Creates a cathartic effect. • Stimulating in nature. • Pleasurable and entertaining.

Based on impressions derived from Collingwood's book, perspectives that attribute the artist's knowledge, experience, and imagination as sources for creating art objects have been categorized within the "artist" group. Additionally, characteristics believed to give meaning to art products, perceived as the end result of a creative process, fall within the "art product" group. The effects of art products on visitors (perceptual, psychological) are considered within the "visitor" group.

Within the scope of the classification performed, characteristics attributed to the artist group align more with concepts such as "philosophy," "void," "thought," "inspiration," "culture," "East-

West synthesis," "design approach," "freedom of thought," "color," "permanence," "communication," "courageous thinking," and "originality thinking" within architectural disciplines. On the other hand, characteristics associated with the art product group in architectural disciplines correspond to concepts such as "philosophy," "time," "context," "nourishment from history," "East-West synthesis," "courageous thinking," "communication," "originality thinking," and "color." Attributes evaluated within the visitor group align with "improvement and imagination," "triggering," "inspiring," and "color."

From this perspective, the attitudes architects possess when expressing their structures parallel the dynamics of art, suggesting that architectural works, like art products, may carry various underlying thoughts. Additionally, just like art objects, architectural structures can impact visitors differently.

Considering its definition and place in human experience, architecture is the art of creating living spaces that go beyond meeting users' physical needs, allowing for the fulfillment of their social, cultural, and psychological needs and the realization of their actions. Rasmussen (2021) defines architecture as a functional art that establishes the order surrounding lives and sets limits within the lived space (p.12). From Rasmussen's statement, it is understood that functionality is the distinguishing factor separating architecture from art. Tadao Ando elucidates the relationship between architecture and function, stating, "The importance of architecture lies in the distance from functionality." According to Ando, once the functional foundation is established in architectural structures, it becomes necessary to distinguish architecture from mere functionality (Cited in Pallasmaa, 2016, p.77). Ando's statement implies that architecture should not be solely based on pure functionality.

Architecture cannot exist without constantly transcending its limits; it is always in the process of formation and changing (Benjamin, 2005, p.276). The multidisciplinary nature of architecture leads to its perception as more complex than other arts (Beken, 2007, p. 6). What sets architecture apart from other art forms is its inability to be executed in isolation. Supporting this notion, Rasmussen (2021) likens architects to theater producers—they design the lived spaces but are not the ones constructing them. Despite these distinctions, the creative process most closely resembling architecture is found within the realm of art (Kuban, 2002, p. 59).

In conclusion, within the scope of this study, strong correlations can be identified between Collingwood's principles regarding the characteristics of art and the perceptual and applicative approaches of the examined designers in their design processes.

In the context of the principles of art, examining concepts determined by designers' design perspectives reveals that art most aligns with design disciplines in terms of having a "unique thought process," being a "creative process," focusing on "process and experience," and providing an "imaginative experience." The hypothesis that the phenomenon of art can be interpreted through the perspectives of experienced designers in the fundamental areas of architecture, planning, and design is affirmed based on this information.

The study concludes that the varied approaches to design in different design disciplines draw from certain aspects and principles of art, indicating significant richness within this interconnection.

References

Al Şensoy, S. & Özdemir Işık, B. (2018). Mimarlık ve ressamlık arakesitindeki bir sanatçı: Hundertwasser. *Sanat & Tasarım Dergisi*, 8(2), 76-94.

Alp, S., (2020). Boşluk, Form ve Malzeme Çerçevesinde Heykelde Mimari, Mimaride Heykel Eğilimleri, İnönü Üniversitesi Kültür ve Sanat Dergisi. 6(2), 86-99.

Arıbaş, M. (2021, Ocak 9). Arata Isozaki. https://archi101.com/mimarlar/arata-isozaki/

Arslan, F. (2022). Sanatın İlkeleri Kitap Değerlendirmesi. *Universal Journal of History and Culture*, *4*(1), 100-103

Arslan, R. & Yapıcı, M. (2014). Sanat yapıtında psikolojik obje üzerine hermeneutik bir analiz: ressam Gülbin Zeren örneği. *Ulakbilge*, 2(4), 41-56.

Astbury, J. (2022, Mayıs, 11). Bernard Tschumi is a deconstructivist architect with big ideas. Dezeen. https://www.dezeen.com/2022/05/11/bernard-tschumi-deconstructivist-architect/

Ataseven, S. Y. (2021). Sanatın iyileştirici gücü teması içinde Frıda Kahlo'nun yaşamı ve resimleri. *Ekev Akademi Dergisi*, (88), 503-522.

Bachelard, G. (1958). Trans Jolas (1964), M. The Poetics of Space. Boston: Beacon Press Books.

Bal, M. (2012). Sanat Felsefesine Bir Giriş Olarak Collingwood'un Kısaca Sanat Felsefesi Yapıtı. ETHOS: Felsefe ve Toplumsal Bilimlerde Diyaloglar, 5(1), 31-54

Beken, N. E. (2007). Mimarlık ve Sanat: Çakışım Boyutlarının İrdelenmesi, (Yüksek Lisans Tezi). YökTez. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=D7fO6MSAWF-J63MwAp384A&no=HmKTCw1-q3Mj8bf_eMN9Pg

Benjamin, A. (2005). The housing of architecture. N. Leach (Ed.) Rethinking Architecture içinde 269-285. New York: Routledge.

Berkus, B. A. (2000). Art Architecture Parallels Connections. Avustralya: The Image Publishing

Bingöl, E. Kuram ve Pratik Arasında Peyzaj: Kentin Karşıtımı, Kentsel Süreçlerin Katalizörü mü? İDEALKENT, 12(32), 592-621.

Bozkurt, N. (1995). Sanat ve Estetik Kuramları (2. Basım), Sarmal Yayınevi, İstanbul

Cemal, A. (2012). Sanat Üzerine Denemeler (2.Basım), Can Sanat Yayınları, İstanbul

Cho, H. J. (2020). Arata Isozaki: the architect as an artist. *Arq: Architectural Research Quarterly*, 24(3), 1-12.

Collingwood, R. G. (2021). Sanatın İlkeleri, FOL Kitap, Ankara

Corner, J. (1999). Recovering landscape: Essays in contemporary landscape architecture. New York: Princeton Architectural Press.

Çabuk, S. N., Çabuk, A., Ersoy, M., &Şenöz, E. (2013). Dönüşen peyzaj ve doğa ile tasarım bağlamında peyzaj şehirciliği ve geo tasarım kuramları. *Peyzaj Mimarlığı V. Kongresi Bildiriler Kitabı*, 474-487.

Davies, C. (2011). Thinking about architecture: an introduction to architectural theory. Laurence King Publishing: İngiltere.

Derrida, J. (2005). Architecture where the desire may live. N. Leach (Ed.) Rethinking Architecture içinde 300-328. New York: Routledge

Aktlan, R. U. (2020). Temel Renk Armonilerinin; Sanat, Tasarım ve Sinema Alanlarında Kullanımı. *Fine Arts*, 15(1), 71-87.

Erdem Küçükşahin, V. (2022). Mimari tasarim sürecinde boşluk kavraminin analitik irdelenmesi. (Yüksek Lisans Tezi). GCRIS ktun. https://gcris.ktun.edu.tr/bitstream/20.500.13091/2886/1/733127.pdf

Eroğlu, A. (2017). *John Dewey'de deneyim ve sanat*. Hiperlink eğitildi. ilet. yay. san. tik. ve ltd. hala.

Field Operations, (2002). Fresh Kills landfill to landscape design competition design report. New York

Foster, H. (2013). The Art-Architecture Complex. Verso: New York

Giovannini, J., (1986). Arata Isozaki: From Japan, A New Wave Of International Architects. https://www.nytimes.com/1986/08/17/magazine/arata-isozaki-from-japan-a-new-wave-of-international-architects.html?utm_medium=website&utm_source=archdaily.com

Gujuluva, (b.t.). How does culture shape Architecture. re-thinking the future. https://www.re-thinkingthefuture.com/rtf-fresh-perspectives/a582-how-does-culture-shape-architecture/#google_vignette

Güney, D. (2003). Mimarlık gerçeklikleri ve mimarlıkta zamanın kavranışı. (Doktora Tezi). Polen. İTÜ. (143097).

Gür, E. N., (2019)., 2019 Pritzker Ödülü Kazananı Arata Isozaki: Evrensel ile Yerel Ara Kesitinde, *Mimarlık Dergisi*, 437, 32-34.

Hasol, D. (2011, Ocak 1). Mimarlık Sanat Değil mi? Doganhasol.net. http://www.doganhasol.net/mimarlik-sanat-degil-mi.html#:~:text=1562%20y%C4%B1l%C4%B1nda%20Floransa'daki%20akademinin,g%C3%BCzel%20sanatlar%E2%80%9D%20ba%C5%9Fl%C4%B1%C4%9F%C4%B1%20alt%C4%B1nda%20toplan%C4%B1r.

Hasol, D. (2021, Şubat 11). M.Ö.6.yy.'da yaşamış olan Çinli düşünür Lao TZU, "Bir yapının gerçeği, döşeme ve duvarlarında değil içindeki boşluklardadır" demiştir…[Tweet]. Erişim Adresi: https://twitter.com/DoganHasol/status/1359837967972519938

Isozaki, A. (2006). Japan-ness in Architecture, The MIT Press.

Isozaki, A. (2009). Royal Academy of Arts tarafından gerçekleştirilen röportaj [Video kaydı]. Arata Isozaki Hon RA: Andrea Palladio through the eyes of contemporary architects

Isozaki, A. (2019). Archdaily tarafından gerçekleştirilen röportaj [Video kaydı]. Arata Isozaki, 2019 Pritzker Architecture Prize.

İba, Ö. Ü. Ş. M., & Güney, Ö. Ü. S. (2023). Sürdürülebilir malzeme ile tekstil heykelde "joana schneider" örneği. *International Journal Of Communication And Art,* 9, 1-16.

Kayahan, Z., & Çevik, M. B. N. (2021). Çağdaş sanatta değişen mekân algisi ve sanatçi-izleyici etkileşimleri/buluşmalari. *The journal of academic social science*, (108), 379-393.

Kılıç, O. (2020). İç Mekânda Doku Etkisinin Kurgulanmasında Tasarımcı Yaklaşımlarının İncelenmesi. *Avrupa Bilim ve Teknoloji Dergisi*, (18), 858-867.

Koca, Ş. E. (2019). Sinemada anlam yaratma sürecinde rengin metaforik kullanımı. *Sanat ve Tasarım Dergisi*, (23), 223-239.

Köse Doğan, R. (2016). Resim ve Mekân Arasındaki İlişki: İlham Veren Projeler. *Online Journal of Art and Design*, 4(2), 48-65.

Kuban, D. (2002). Mimarlık Kavramları: Tarihsel Perspektif İçinde Mimarlığın Kuramsal Sözlüğüne Giriş, İstanbul: Yem Yayınları.

Leach, N. (2005). Rethinking Architecture. Routledge: London.

Lehmann, S. (2017). Reappraising the Visionary Work of ArataIsozaki: Six Decades and Four Phases. Arts Journal,   6(3), 10

Mallgrave, H.F. & Goodman, D. (2011). An Introduction to Architectural Theory. Wiley-Blackwell: İngiltere.

Önal, G. K. (2011). Yaratıcılık ve Kültürel Bağlamda Mimari Tasarım Süreci. *Uludağ Üniversitesi Mühendislik-Mimarlık Fakültesi Dergisi*, 16(1), 155-162

Örnek, Y. (2015). Mimarlık ve Felsefe: Çağdaş Filozofların Mimarlığı Yeniden Düşünmesi. *ETHOS: Felsefe ve Toplumsal Bilimlerde Diyaloglar*, 8(2), 1309-1328.

Ötgün, C. (2009). Sanat Yapıtına Yaklaşım Biçimleri. *Sanat ve Tasarım Dergisi*, 18(11), 159-178

Özçınar, Ş. (1992). Sanatın doğası ve bir varlık sorunsalı olarak sanat, *Felsefe Dünyası*, 30, 113-126

Özkaraca, N. & Halaç, H. H. (2021). Tarihi çevrede boşluklar üzerine tipomorfolojik bir okuma: Konuralp kentsel sit alanı örneği. *Ege Coğrafya Dergisi*, 30(2), s. 337-358.

Özrili, Y. (2021). İmgesel tasarım: geri dönüşen sanatın müzeye yansımaları. *Tykhe Sanat ve Tasarım Dergisi*, 6(10), 96-114.

Pallasmaa, J. (2016). Tenin Gözleri (3. Baskı). İstanbul: Yem Yayınları.

Rasmussen, S.E. (2021). Yaşanan Mimari (13.Baskı). İstanbul: Remzi Kitabevi. (1959).

Reuben Peters, O. &Olabode, O. (2018). Comparative Analysis between Art and Architecture. *Online Journal of Art and Design*. 6(2), 15-32.

Sevim, S., & Özge, T. A. N. (2020). Plastik atiklarin doğaya verdiği zararin sanattaki yansimalari ve seramik uygulamalar. *Journal Of Arts*, *3*(3), 159-178.

Sütçü, Ö. Y. (2015). Adorno'nun Felsefesinde Özgürlük İdesi Olarak Sanat. *FLSF Felsefe ve Sosyal Bilimler Dergisi*, (20), 271-288.

Şpat, S., (2017). Teknolojinin İç Mekân Tasarımına Etkileri ve Toplumsal Yansımaları. (Yüksek Lisans   Tezi).   YökTez. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=W6gO18cy8eqeg80NOGlkzA&no=G2r0FAg5yVkVocIsxPM_aw

URL-1: https://architectuul.com/architect/arata-isozaki

URL-2: https://www.youtube.com/watch?v=hT36-CrNF0c

URL-3: ilgiornaledellarchitettura.com

URL-4: https://inhabitat.com/interview-architect-james-corner-on-the-design-of-high-line/

URL-5: https://istandist.com/tasarim-dunyasinda-bir-efsane-karim-rashid/

URL-6: https://www.vondom.com/designers/karim-rashid/

URL-7:   https://www.yankodesign.com/2011/04/04/not-afraid-of-color-interview-with-karim-rashid/

URL-8:   https://www.gencicmimarlar.com/post/renklerden-korkmayan-tasarimci-kari%CC%87m-rashi%CC%87d

Vitrivius. (2021). Mimarlık üzerine (7.Baskı). İstanbul: Alfa.

Wiltsher, N. (2017). Feeling, emotion and imagination: In Defence of Collingwood's Expression Theory of Art. British Journal for the History of Philosophy.

SPACES IN FLUX: DOCUMENTING MIGRATION, BELONGING, AND SOCIO-SPATIAL TRANSFORMATION IN BASMA[HA]NE, IZMIR

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Abstract Basmane is one of the oldest settlement areas in Izmir, which has been welcoming diverse internal and international migrant populations throughout its urban history, thus having become closely associated with the notion of "outsiders". This paper recognizes Basmane as an urban space shaped by a multifaceted history of migration, where each migrant's experience contributes to interconnected socio-spatial, socio-cultural, and socio-economic layers, prompting the need for novel spatial interpretations. In this fashion, the study acknowledges migration as a transformative socio-spatial force, and seeks to explore how migrants contribute to the spatial fabric in regenerating a sense of home in the area. To achieve this aim, this paper focuses on three individual cases: (a) a courtyard/home, (b) a hotel/*cortijo*, and (c) a public park. Each case provides the study with a particular insight concerning the spatial practices of a different migrant profile addressing different spatio-temporal layers of the area, simultaneously converging in the present moment. The study draws on field research that involves semi-structured interviews conducted with relevant actors in the area. Building on these narratives and employing a moderate participant observation approach, the study supports the assertion that spaces of migration cannot be investigated without taking into consideration the agency of migrants. Moreover, it elucidates how migrants grapple, even in the most challenging socio-spatial scenarios, with establishing a sense of place, revealing their struggles (and at times, failures) in maintaining such endeavors, and exposing the most fragile connections they form with the spaces they inhabit.

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Introduction

Basmane[1] stands as one of Izmir's oldest settlement areas which has been welcoming migrants, refugees, and newcomers spanning many centuries. Historically, Basmane was a multi-ethnic region complete with residential districts and a diverse array of religious structures, traces of which are still embedded in the built environment today. During the Ottoman era, Basmane played a pivotal role in housing Muslim, Jewish and Orthodox Christian communities, though the non-Muslim populations dramatically diminished following the end of the Independence War and the great fire of Izmir in 1922 (Belge, 2012; Kayın, 2010; Ürük & Pınar, 2013 in Işıklı, 2021, p.191). Basmane's tradition of welcoming a diverse array of internal and international migrants and displaced populations persists, a testament to its enduring urban history.

The influx of rural-to-urban migrants from Eastern and Southeastern Anatolia that commenced in the 1950s set in motion the transformation of Basmane into a deprived inner-city area (Kayın, 2010; Tekeli, 2017). Following the substantial domestic migration, Basmane witnessed the arrival of irregular migrants hailing from different parts of the world such as Afghanistan, Iraq, and several sub-Saharan African countries (Kaya, 2020; Oner, Durmaz-Drinkwater, & Grant, 2021). This crowded and diversified migrant population has led to Basmane being closely associated with "outsiders" and stigmatized as a "degenerate" urban space despite its historic significance and its location at the heart of Izmir city center (Saraçoğlu and Bélanger, 2021).

In 2011, the initial wave of Syrian asylum seekers, forcibly displaced by the Syrian civil war, arrived in this milieu, followed by a continuous influx in the subsequent years. This Syrian migrant flow put the area on the world map as a prominent transit hub between Syria and Europe (Güngördü, 2021; Oner et al, 2021; Yıldız & Uzgören, 2016; Yıldız, 2021). Presently, Basmane remains a destination for a variety of new migrant groups, including Russian and Ukrainian nationals escaping the conflicts in their homelands (Intv.1, 2023), as well as Afghan individuals seeking refuge from the Taliban regime (evrensel.net, 2019) (Figure 1).

Considering its rich history of migration, as briefly outlined above, this study views Basmane as an urban space where migration-related socio-spatial phenomena have accumulated over time, ultimately shaping it into a distinct space of migration. Each migrant's journey through Basmane contributes to the intricate web of socio-spatial, socio-cultural, and socio-economic layers in the area, prompting the need for new spatial interpretations. This paper recognizes migration as a transformative socio-spatial tool and inspires to examine the spatial practices of migrants. Specifically, it delves into their efforts to regenerate home in a so-called

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[1] Basmane (initially *Basma-hane*) traces its etymology to the 18th-century Ottoman Empire period when the printing-based textile (*basma* in Turkish) industry was established and developed in the area (Sürgevil, 2011 in Işıklı, 2021, p.191). The Turkish word *hane*, of Persian origin (https://www.etimolojiturkce.com/kelime/hane, last access: 19.01.2024), on the other hand, signifies a 'house' or 'household', invoking both physical and emotional associations with the concept of home.

"degenerate" and alienated urban space—what is more, within an alienating host community—and their struggles, and sometimes failures, in doing so.

In the refugee and migration literature, concepts such as ambivalence, precarity, vulnerability, and insecurity are frequently encountered (e.g., the context of Syrian migrants in Turkey: Baban, Ilcan, & Rygiel, 2017; Chacko & Price, 2021; Ilcan, Rygiel, & Baban, 2018; Oner et al, 2020; Waite, 2009, etc). Conversely, the notion of home is often closely associated with security, familiarity, nurture, belonging, and shelter (Blunt & Dowling, 2006; Massey, 1992; Crowell & Dreyfus, 1993; Tuan, 2004, etc). When the concepts of 'migration' and 'home' come together, and especially when the migrant has to regenerate their home in the place of migration, these seemingly opposing concepts intertwine, leading to new spatial inquiries. Chambers (1994) expresses this situation: "The experience of migration, exile and diaspora reveals that the simple equation between identity and place, self and home, is an illusion that is as precarious as it is reassuring" (1994, p.9).

Emerges from within these contradictions is the home of the migrant, who leaves us in uncertainty about whether they are a powerless victim or a socio-spatial actor with agency. Batuman (2021) strikingly argues that "the spaces and the spatiality of [forced] migration" (p.328) cannot be investigated without taking into consideration the migrant agency: "[…] Failure to do so leads to the acceptance of the term 'refugee' as an identity marker without addressing the problematic connotations it embodies. Refugee identity at once essentializes and contributes to the othering of those labeled as such, as well as falsely homogenizing the dislocated individuals and groups" (Batuman, 2021, p. 328).

In this study, we endeavor to avoid the misconception pointed out by Batuman (2021), and explore how migrants employ their agency in the urban landscape of Basmane, a tapestry woven with centuries of migration waves. We aim to understand this phenomenon by examining three cases encountered in different historical neighborhoods of Basmane: (a) A courtyard/home in Pazaryeri Neighborhood, (b) Manisa Akhisar Hotel/*Cortijo* in Kurtuluş Neighborhood, and (c) the Agora Park in Yeni Neighborhood (Figure 2). Each case is chosen particularly to offer the study a unique perspective, addressing various spatio-temporal layers of the area, simultaneously converging in the present moment. The selection of the cases is based on varying levels of publicness, changing resident migrant profiles, and different practices in establishing place attachment and a sense of belonging. Furthermore, each case, in one way or another, touches upon the historical layers of Basmane's built environment. Hence, the study not only investigates how migrant users inhabit these spaces and engage in spatial practices but also emphasizes the socio-spatial and socio-temporal connections between these historical layers and the specific cases under examination.

The reason for selecting the first case, the courtyard/home from Pazaryeri Neighborhood, lies in the dense population of Syrian migrants, who currently constitute the most prominent international migrant community in the area (Karakaya Ayalp & Yangın Kiremit, 2021). The discovery of this case, which provides insights into the spatial practices of this specific migrant group, is coincidental, sparked by the authors' attention to the neighboring *İplikçi Dede* Tomb.

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Indeed, it is possible to find many other residences in the neighborhood occupied by Syrian migrants. However, factors motivating the authors to select this particular case include: (a) their curiosity about the spatial relationship between the case and a neglected historical layer dating back to the early 18th century in Basmane, and (b) the ease with which they can secure permission from the residents of the chosen dwelling for their research.
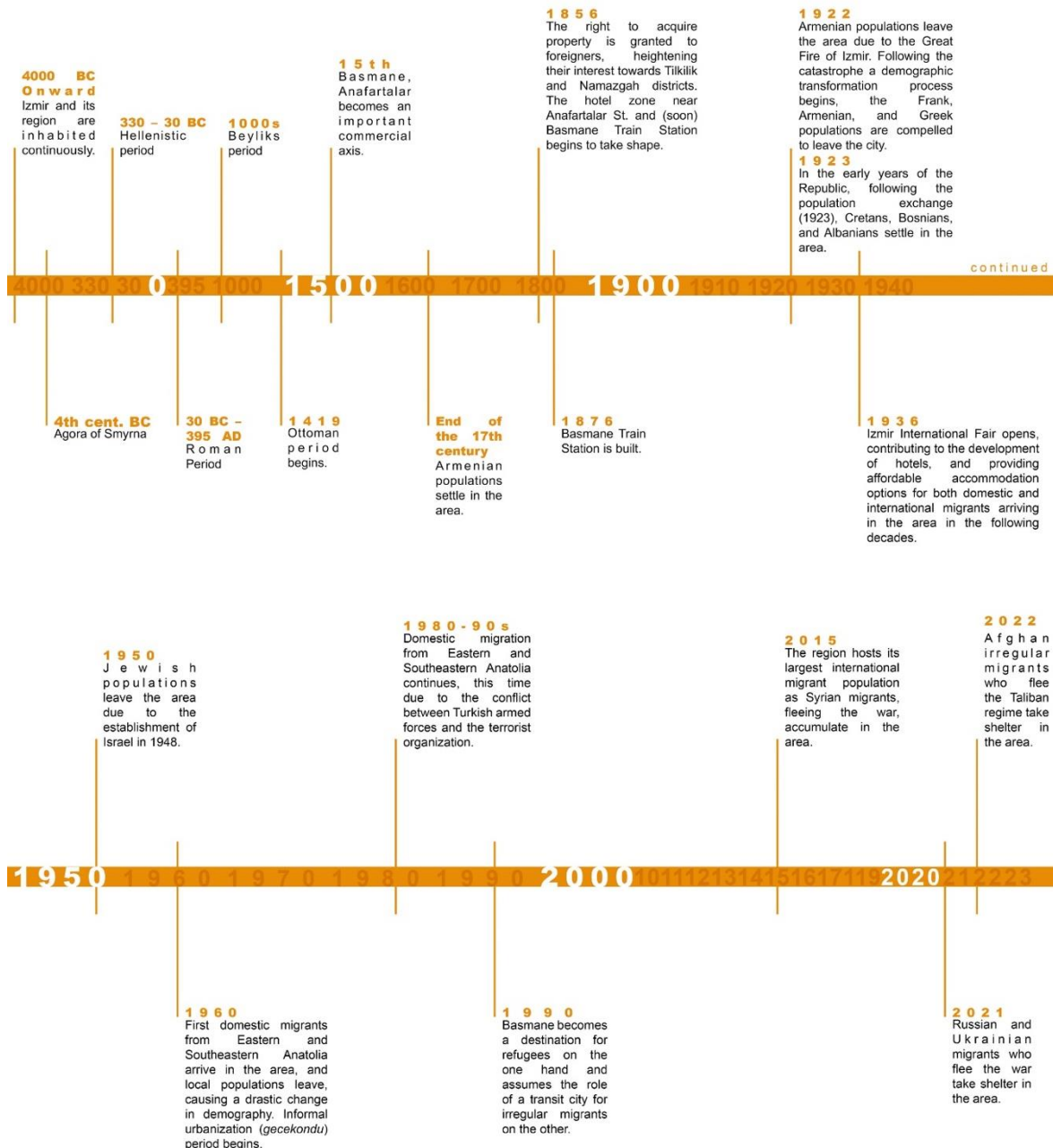

Figure 1. Migration and settlement history of Basmane (timeline prepared by the authors based on: Belge, 2012; Işıklı, 2021; Perşembe & Özgür Gönç, 2018; Yorulmaz, 2022; Intv.1; 14; 15, 2023; graphic work by Author 2).

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Figure 2. Case studies of the paper: (a) Courtyard/Home in Pazaryeri Neighborhood, (b) Manisa Akhisar Hotel/*Cortijo* in Kurtuluş Neighborhood, (c) Agora Park in Yeni Neighborhood. (Basmane map produced by Author 2 using Mapbox base map; photos from Author 1's archive, 2023).

The choice of the second case, Manisa Akhisar Hotel/*Cortijo*, is attributed to: (a) the significance of *cortijo*s as a building typology, representing one of the most important migration spaces in the built environment history of Basmane, (b) Manisa Akhisar Hotel's being one of the few remaining *cortijo* structures in the region, and (c) its continued use as migrant accommodation. As for the selection reasons for the third case, Agora Park: (a) it functions as a space of coexistence where a diverse range of migrants in terms of age and origin can be observed, and (b) it stands out as a rare public space with these qualities where individuals, particularly Syrian migrant women, choose to socialize in the area.

The study employs qualitative field research, primarily through field observation conducted in the Basmane area from March to July 2023. In addition to field observation, the paper

leverages data gathered from (a) pertinent literature reviews and (b) 15 semi-structured interviews (referenced as Intv.1, 2, 3, etc. throughout the paper) involving various stakeholders, users, and key informants in the area. Among these participants are Syrian and domestic migrants, hotel managers, academics, and volunteers from non-governmental organizations. Together, these sources serve as key elements of the study, facilitating a comprehensive exploration of the Basmane area.[2]

Courtyard/Home in Pazaryeri Neighborhood

The first case examined within the context of this study constitutes the dwelling of a Syrian migrant family in Pazaryeri Neighborhood (the precise location of this case shall remain undisclosed in this paper, owing to privacy considerations). The case can be considered exceptional even for the Syrian migrant community, which is known for having significantly poor housing conditions in the region.

Figure 3. a) (left, corresponds to View 1 on Figure 5). Street view with İplikçi İsmail Dede Tomb cemetary entrance. b) (right, corresponds to View 2 on Figure 6). Courtyard entrance. (Author 1's archive, 2023).

The architectural components of the dwelling comprise a group of severely neglected historical and makeshift structures around a spatially modest courtyard, situated within the borders of a former abandoned religious landmark, *İplikçi İsmail Dede* Tomb, dating back to the early 18th

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[2] The field visits and interviews conducted from June 28 to July 9, 2023, are part of the context of the Architectural Association (AA) Visiting School "In Other Latitudes: Migration in the Mediterranean", where the corresponding author participated as a guest speaker.

century (circa) (Daş, 2012). The family has been living there as tenants for over a decade. The stone-framed, round-arched entrance opening of *İplikçi İsmail Dede* Tomb, providing access to a small cemetery (Figure 3a), is what lead the authors to discover this otherwise secluded dwelling location. During our initial field visit, as we observe the tombstones in the cemetery, a resident of one of the old apartment buildings across the narrow street greets us. She promptly begins sharing information about the alleged looting attempt of the cemetery by the Syrian family living right behind, indicating the area behind the southern side of the high wall encircling the cemetery. As she claims, "The Syrians living there dug these graves, causing a lot of damage to this place" (Intv.2, 2023).

In the area, due to the quite prevalent issue of discrimination against the Syrian migrant community (Bélanger & Saraçoğlu, 2020; Oner et al, 2021; Saraçoğlu & Bélanger, 2019), we are accustomed to hearing such statements from local residents. At this point, it is necessary to question the meaning of 'local' within the Basmane context, as we learn that the woman who interact with us migrated from Mardin to Izmir decades ago. Nonetheless, her remarks capture our attention, and following a brief investigation, we manage to locate the entrance leading to the aforementioned courtyard. Fortunately, we get the opportunity to converse with the younger daughter of the household (Intv.5), who kindly grants us permission to enter and explore the dwelling.

Access to the courtyard/home is possible through a metal entrance door opening at street level, followed by ascending approximately 15 steps (Figure 3b). With this door closed, it is impossible to perceive the courtyard space from the street level. This situation imparts to this case the most private and secluded nature within the scope of this study.

When one reaches the courtyard level, hanging laundry can be seen, along with a pine tree and some greenery (Figure 4). Following that, surrounding the courtyard, a series of highly neglected structures[3], some of which are historical (including the *İplikçi İsmail Dede* Tomb structure), draw attention. Today, the tomb structure serves as an inert storage space for the Syrian family (Figure 5b). The other structures surrounding the courtyard consist of makeshift single-story buildings. The house where the Syrian family resides is a part of these jerry-built structures (Figure 5a).

The authors have the opportunity to visit the location of this case twice (on March 10, 2023, and July 4, 2023). Based on the information gathered during these visits, it is realized that there were other individuals interested in this location in the past, but none of them went through the trouble of seeking permission to enter the courtyard, i.e., the private domestic space of the Syrian family's home. Intv.5 (2023) emphasizes this fact multiple times, underlining that the authors are the only visitors who ask for permission to enter the premise and take photographs of their house. Hence, it becomes evident that the private nature of this case, which serves as the home of the Syrian family and appears highly isolated from the

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[3] According to Daş (2012), it is not possible to determine whether these structures, some of which are now in ruins, belonged to a zawiya/dervish lodge/dargah organization. According to information from local residents, the tomb structure was converted into a residential unit in the 1970s (Daş, 2012, p.65).

outside, is quite fragile. It is noted that the Syrian family has not expressed any opposition to intruders, yet they appear to be apprehensive about it:

> They don't ask us at all. They just come in directly. They take pictures of everything and wander around as they please. Then they leave. We don't say anything. What can we say? No one has asked us if they can enter besides you, to be honest (Intv.5, 2023).

Figure 4. (corresponds to View 3 on Figure 6). General view from courtyard.
(Author 1's archive, 2023).

Figure 5. a) Syrian migrant family living space entrance (corresponds to View 4 on Figure 6).
b) Storage spaces used by Syrian migrant family (corresponds to View 5 on Figure 6).
(Author 1's archive, 2023).

As Saraçoğlu & Bélanger (2021) also claim, the reason they refrain from utilizing their agency in such matters stems from their effort to lead their lives "without drawing attention" in an environment where they already do not feel accepted.

During both visits, the authors receive exceptionally warm and hospitable treatment. However, they only spend time in the courtyard, and offerings such as tea and snacks are provided there as well; the authors are not invited inside. During the visits, the mother of the Syrian family remains inside the house and does not express any interest in the authors. Through these observations, it becomes evident that the spaces the family considers highly private are the interior spaces of the premise. The layout of these interiors is sketched based on the statements provided by the family (Intv.5; 6, 2023) (Figure 6).

On the other hand, Intv.5 (2023) shares an interesting piece of information about the interior usage of their home:

> Our living room is spacious, so my dad sometimes rents it out to Syrians who want to host weddings or events. They have fun inside. I think our courtyard would be the most suitable place for this; it's even more spacious and open. They could play music here and have fun until morning.
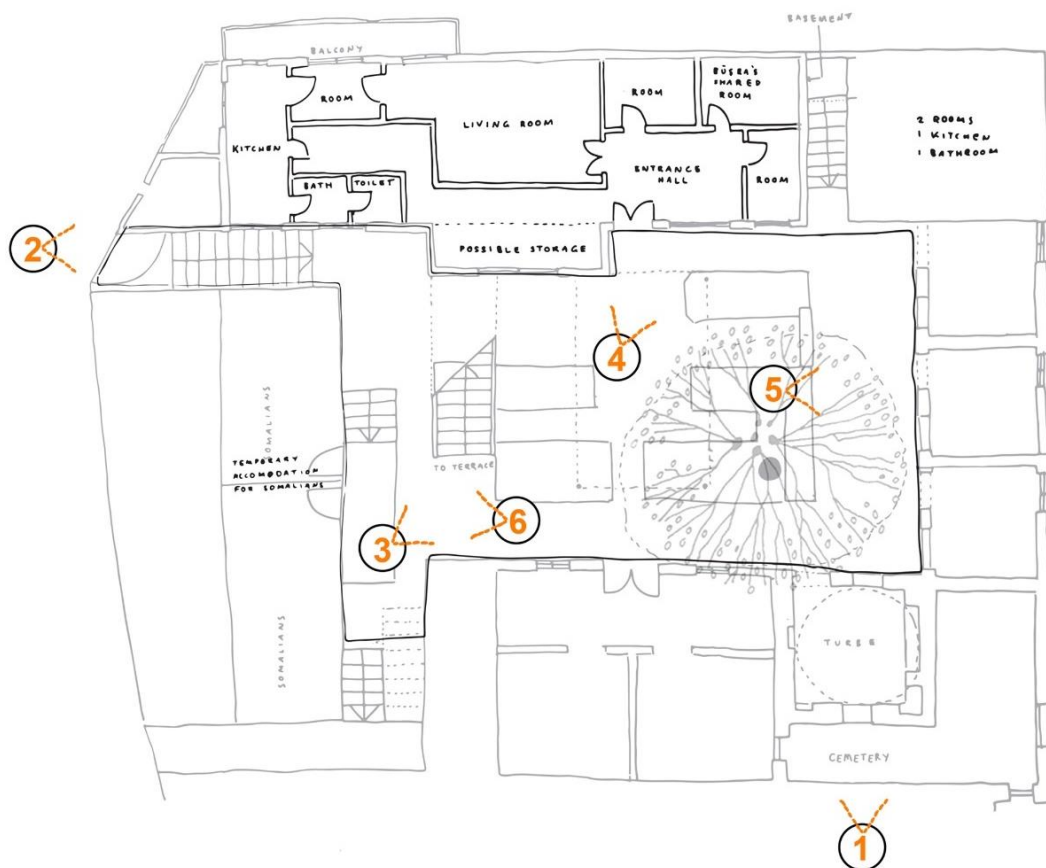

Figure 6. Courtyard plan (not to scale) (produced within the scope of AAVS "In Other Latitudes" Visiting School, July 2023, edited by Author 2).

The aforementioned 'wedding' ceremony in this context is not explicitly clear as to whether it is a religious ceremony, a celebration with music, or a combination of both. It is noteworthy that the family transforms their habitus for a fee for other Syrian couples who lack the necessary space in their houses and cannot afford to book a venue. In this way, the family willingly acknowledges this privilege they extend to their fellow countrymen (*memleketli*), even if it involves payment, and is temporarily willing to compromise the privacy of their home. In addition to financial reasons, another factor enabling this situation could be the Syrian migrant community's desire to come together on such occasions. These joyous events, bringing them together in their new homes, contribute to strengthening their sense of belonging to the place.

Amid these spatial adaptations for communal celebrations, the family's transformations extend beyond the interiors of their home to the courtyard, reflecting a multifaceted engagement with their living environment. The family's spatial rearrangements regarding the utilization of the courtyard include removing the central fountain pool by breaking it, trimming, and caring for the pine tree, constructing a pergola to provide shade and planting vines, growing roses and various vegetables in the limited soil area (by the mother), and using the open space for drying laundry. Additionally, there are two sets of stairs leading from the courtyard level to a terrace; this terrace is an open space where the eldest brother of the family keeps his exercise equipment (Intv.6, 2023). The remaining jerry-built single-story structures are used by the Syrian family as storage spaces (Figure 5b).

On the right side of the main entrance to the courtyard, there is another single-story, symmetrical-façaded structure (featuring a total of two doors, two regular-sized windows, and four small square windows on its front elevation, which most likely indicates the presence of two individual living spaces inside). Intv.5 and 6 (2023) report that this structure accommodates some Somali migrants on a daily basis, suggesting a transient arrangement where people come and go frequently (Figure 7). The constant change of residents here is a source of discomfort for the Syrian family. As Intv.6 (2023) states: "It's unclear when and who comes in and out; every day, different people stay here. We don't know them, and we have no interaction with any of them whatsoever. We don't like it, and it's not safe."

It is clear that the Syrian family have developed a sense of belonging and ownership towards the entire courtyard area, and that they dominate the usage of it, thus, they are not pleased with sharing this space with others. During our last visit, it is observed that some of the mentioned Somali migrants enter and exit their homes and engage in conversations among themselves. There appears to be very limited social interaction between these individuals and the Syrian family.

The insights from this case should be contextualized within the socio-spatial layers prevalent in the spatiality of migration in Basmane, a recurring theme in the historical built environment of the area: It is such an area where domestic migrants, who migrated from Southeastern Anatolia decades ago, coexist with more recently arrived international migrant groups, a phenomenon that can be observed throughout Basmane. These diverse migrant communities, even through the smallest of gestures, attach new meanings to their surroundings and

regenerate a sense of identity and belonging. Between formality and informality, permanence and temporariness, home and homelessness, and identity and anonymity, they find ways to (co)exist without major social friction even when they are not very willing to do so.

Figure 7. Somali migrants' living unit (Author 1's archive, 2023).

Manisa Akhisar Hotel/Cortijo in Kurtuluş Neighborhood

The second case of the study, Manisa Akhisar Hotel, is a hotel and an old *cortijo* building in Kurtuluş Neighborhood. It is located on Anafartalar Street, the most prominent commercial axis in the area. To the west, it's adjacent to the Çankaya multi-story car park, and to the south, lies the ancient Agora of Smyrna (Figure 8). Given the structure's socio-spatial identity as a *cortijo*, which will be explained below, and the history of guests and the owners[4], it can confidently be asserted that Manisa Akhisar Hotel is a semi-private space of migration.

*Cortijo*s first emerged in the Jewish quarter in the Basmane area as a communal housing typology that accommodated low-income Jewish populations. These structures were constructed by Sephardic Jews who were forcibly migrated from Spain and Portugal to the Ottoman Empire in the 15th century. *Cortijo*s served as an affordable housing solution to fulfill their requirements for concealment and community togetherness (Kiray, 2004).

The term *cortijo* originates from the Latin word *curtis*, which means courtyard, reflecting the central role of the courtyard in these structures (Nehama, 1977, p.313 cited in Temür, 2022). *Cortijo*s typically comprise individual living units and shared spaces organized around a central

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[4] The last managers of the hotel were Salih and Nejat Acar, with Salih being the son-in-law of a migrant from Cyprus who purchased the *cortijo* from an elderly lady and transformed it into a hotel in 1922, naming it Manisa-Akhisar (Uşaklılar, 2016).

courtyard, characterized by an inward-facing architectural layout that emphasizes the necessity of residing together while maintaining separation from the surrounding neighborhood. They are remarkable examples of spaces of migration in Basmane, of which only a few survived to this day in the form of textile ateliers and affordable hostels (Güngördü, 2021; Oner et al., 2020; Yücel, 2016), one of which is Manisa Akhisar Hotel.
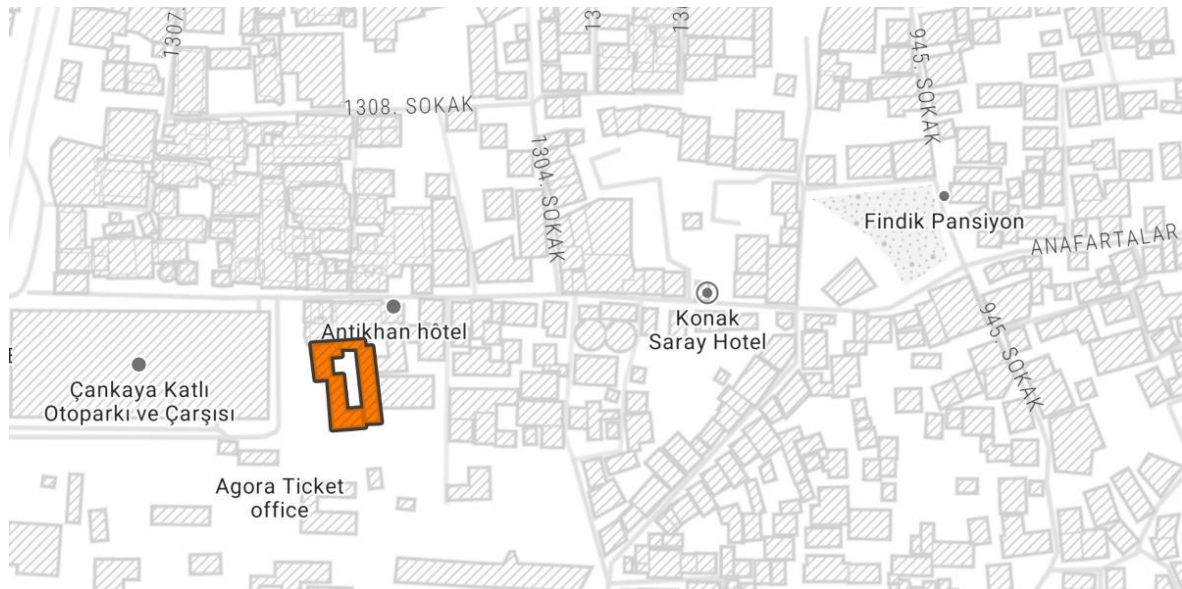
Figure 8. Manisa Akhisar Hotel/*Cortijo* in Kurtuluş Neighborhood (Map produced by Author 2 using Mapbox base map).

Manisa Akhisar Hotel stands as one of the rare surviving *cortijo* structures in the area today. Accessing the building is an intriguing experience, as it involves navigating through an exceedingly narrow passage from Anafartalar Street (Figure 9b). Remarkably, this entrance, despite its location on Basmane's busiest street, goes largely unnoticed by the casual observer. Upon passing through this discreet entrance, visitors are greeted by a reception area that opens into a courtyard. The courtyard is enclosed by four building wings, each housing residential units (Figure 9a).

Figure 9. a) Manisa Akhisar Hotel/*Cortijo* Ground and First Floor Plans (not to scale) (Yucel, 2016, p.250). b) Manisa Akhisar Hotel/*Cortijo* entrance (Author 1's archive, 2023).
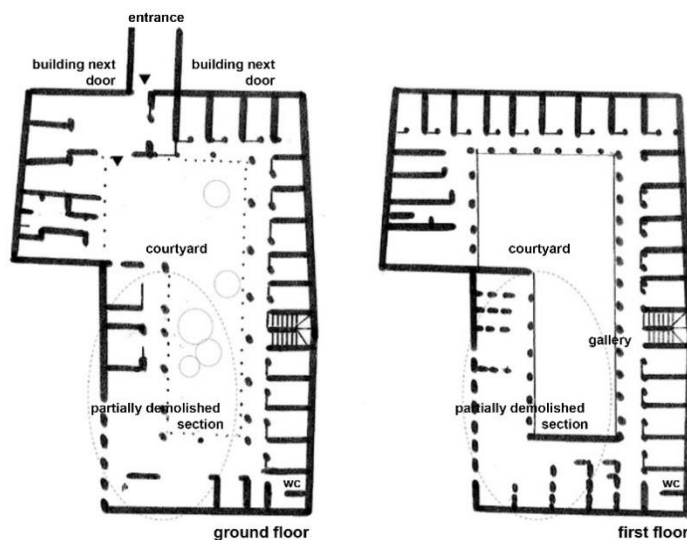

Figure 10.Manisa Akhisar Hotel courtyard general view (Author 1's archive, 2023).

Figure 11.Views from Manisa Akhisar Hotel (Author 1's archive, 2023).

Access to the upper-level rooms is via a common staircase connected to the courtyard. These rooms are notably compact and serve limited purposes. In some cases, residents opt to sleep outside the rooms, a practice reminiscent of the 19th century when cortijos housed a densely populated Jewish migrant community (Temür, 2022, p.69).

The authors paid their first visit to Manisa Akhisar Hotel on March 10, 2023. Upon entering the courtyard, silence prevails despite the exceptionally warm and sunny weather. Apart from the housekeeper, there is no one around, and she continuously warns us not to get too close to the entrance doors of the rooms facing the courtyard: "Don't approach the doors, girl. Someone

might come out, say something; all the rooms are occupied, the inhabitants are resting at the moment" (Intv.9, 2023). Along the long eastern side of the courtyard, laundry hangs. Despite the hotel accommodating numerous guests, the only indications of life are hanging laundry, glimpses of knick-knacks through bare windows, and a few old doorless lockers holding shoes and a modest amount of clothing (Figure 10 & 11).

The place is more of a retreat than a hotel. Despite being in the heart of the city, it somehow hosts its guests away from all the urban commotion and tumult. The hotel seems to have *stretched*, much like its guests, as if it has stood still in time. Following the migration of the Jewish communities from Turkey, particularly in the years after the establishment of Israel in 1948, the new occupants of the *cortijo*s become low-income Turkish citizens, mostly domestic migrants (Moreno & Karkason, 2023). This situation has contributed to the continued association of *cortijo* spaces with migration and urban poverty.

The authors are unable to interview the residents of Manisa Akhisar Hotel. The brief interviews conducted for this case are limited to the two hotel managers and the housekeeping lady (Intv.7; 8; 9, 2023). Nonetheless, Manisa Akhisar Hotel has been accommodating individuals known to have stayed there for many years, up until very recently. Some of these individuals have even been featured in documentaries (see *Bir Avlu Bir Kent* [Secret Garden of the City] by Canan Altınbulak, 2010, and *Basmane Otelde Yaşam* by Onur Tasalı, 2019).

One of the hotel residents, Cemal, shares insights into his life at Manisa Akhisar Hotel in the short video *Beş Asırlık Yadigâr: Manisa-Akhisar Oteli / Cemal Yıldırım Daldal* (lamekân, 2016):

> I have one sister and three brothers. They are all married, living in Karşıyaka. I come and stay here by myself. They tell me, 'Come, stay with us,' but I get bored there. They are all married with families... So I have been staying alone in this room for 3-4 years. My head is clear and I'm comfortable here. In the morning, I lock the door and head to work, and in the evening, I return and unlock my room. [...] In the evening, everyone (residents of the hotel, *the author's note*) retreats to their rooms, has their meal, makes some tea. Except for me, everyone drinks alcohol here, spending their time like that. Four or five people have passed away here, all due to alcohol. [...] What can you expect? Life's hanging by a thread.

Although the residents of Manisa Akhisar Hotel have weak connections with the rest of society, they are strongly attached to the hotel space where they have spent their years, even breaking ties with their own families. Yucel (2016), in her study "Minority heterotopias: the *cortijo*s of İzmir," claims as follows: "Sometimes they talked about living in jail, being removed from society but also stating that at this hotel, which was their home now, they felt accepted" (p.250). Yucel (2016) describes *cortijo*s as heterotopias, as conceptualized by Foucault (1967). She calls them 'minority heterotopias':

> [...] While these first [Sephardi] residents lived in a heterotopia of crisis, the case of the current residents brought *cortijo*s closer to a heterotopia of deviation. They too were in a state of economic crisis, with their socio-economic standing bordering on

homelessness. But they also deviated from the norm with their complete break with the familial ties, troubles with the law and current state of idleness, whether it was by choice or otherwise (2016, p.250).

Presently, Manisa Akhisar Hotel is closed and not accepting guests. Based on the information provided by the hotel's management during our visit, it is likely due to licensing issues (Int.7; 8, 2023).

Agora Park in Yeni Neighborhood

The third and final case of the study, Agora Park, is a public park and children's playground located in Yeni Neighborhood in the Basmane area. The location of the Agora Park is significant due to its opposite neighbor, which is the Agora of Smyrna from the 4th century BC, one of the preeminent historical and archaeological sites in Izmir (Belge, 2012, izmir.ktb.gov.tr, whc.unesco.org, 2023). Apart from the ancient Agora of Smyrna, the park is surrounded by Namazgah Neighborhood to the north, Yeni Neighborhood to the south, the historical, now restored Namazgah Bathhouse and Inn buildings to the east, and a high school building to the west. It is also very close to the main road, Eşref Paşa Boulevard (Figure 12). The park sits in a moderately large parcel and encompasses various greenery and tree elements.
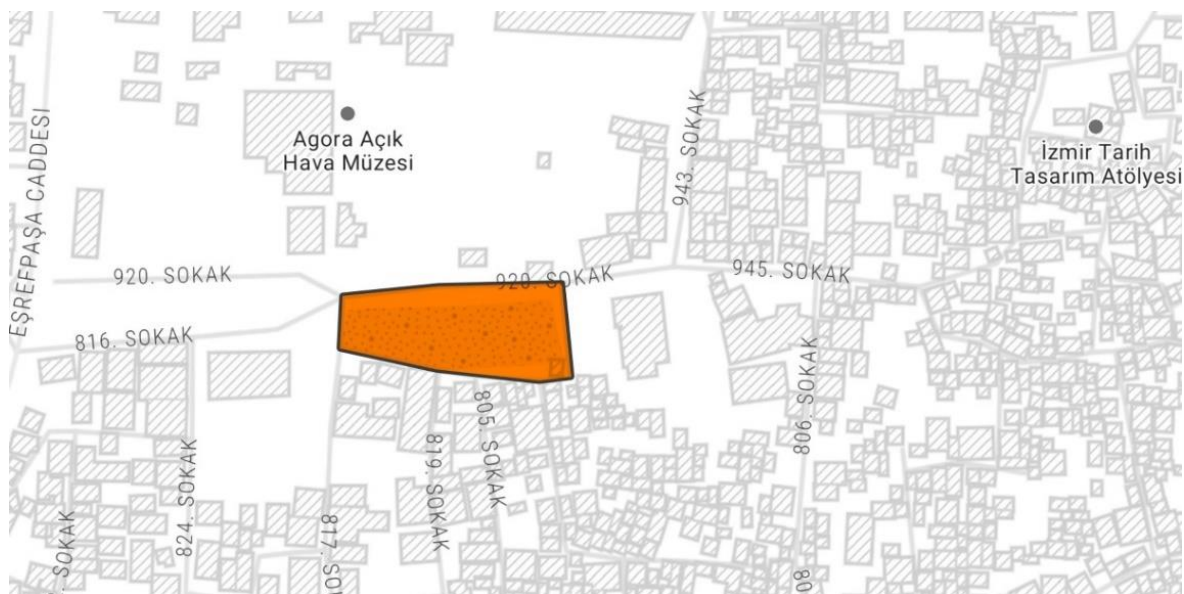
Figure 12.Agora Park in Yeni Neighborhood (Map produced by Author 2 using Mapbox base map).

Situated in such a central location in the area where parks and recreational spaces are scarce, Agora Park stands as a prominent public space regularly visited by both local Basmane residents and members of migrant communities. For a brief period in 2019, the park was known for having hosted a certain number of Afghan refugees who fled the Taliban regime (evrensel.net, 2019; Omaklılar and Aktaş, 2019) (Figure 13).

Unlike other public spaces in the area, where the presence of female residents, especially among the Syrian migrant population, is rare (Saraçoğlu & Bélanger, 2019, 2021), Agora Park

is predominantly frequented by women and their children. Additionally, a noticeable number of migrants from the sub-Saharan African countries can be observed spending time in front of the shops adjacent to the park, benefiting from the shade provided by the trees.

Figure 13. Afghan refugees taking shelter in Agora Park.
(Photo: Evrensel/Dilek Omaklılar, evrensel.net).

Figure 14. Children and their mothers socializing in Agora Park (Author 1's archive).

The playground section of the park accommodates children from all the neighboring communities (Figure 14). According to the field observations, among the users of the park, Turkish national and Syrian children, along with their mothers, take the lead. It is noticed that women from these two groups are acquainted with one another but often avoid social

interaction. Women position themselves on seating units adjacent to the playground or on the sidewalk, observing their children's play. Concerning the children, there is no visible social distinction based on ethnic group or nationality; they play together. During our field visits, children who speak Turkish come near us occasionally and make comments such as "They don't speak Turkish, let me call their sibling" (Int.12; 13, 2023), regarding the younger Syrian children who are present in the playground. These types of remarks indicate that despite the migrant population's significant heterogeneity, there remains a sense of familiarity within the community.

In addition to providing a secure urban public space for children to play, interact, and enjoy fresh air, Agora Park serves as a meeting and socialization spot for Syrian mothers. Through this public space, they have the chance to gather with fellow Syrian women in their neighborhoods, engaging in casual conversations while simultaneously supervising their children as they play safely with their peers. This rare opportunity provides them with a sense of comfort in the public realm, in contrast to the alienation and discrimination they often encounter as migrants in Basmane. The Agora Park becomes a means for Syrian migrant women to rebuild a sense of belonging towards the area, thereby regenerating a piece of home within the oftentimes challenging host community.

Concluding Remarks

The study aspired to provide a small-scale contribution to comprehend how migrants employ their agency in order to regenerate their sense of belonging through spatial practices and how they relate to both the space and the historic context of Basmane. It aimed not only to document the functional efforts of migrants in this regard but also to highlight their struggles and failures stemming from the vulnerability of their situations.

Basmane, acknowledged in refugee and migration literature as a transit hub, has transformed into a destination for (re)settlement, playing a pivotal role in migrants' home-establishment processes, encompassing both its push and pull factors. Deemed 'degenerate,' "insecure, chaotic, full of criminals and illicit activities" (Saraçoğlu & Belanger, 2021, p.470) not only by the rest of the city but also by some of the migrants residing in the area, it constitutes an alienated urban environment for its residents. In the face of such a challenging socio-spatial scenario, the study highlighted migrants' endeavors to establish a sense of place and cultivate a sense of belonging to the area through three case studies. Each case offers the study a unique perspective on the spatial practices of diverse migrant profiles, addressing various spatio-temporal layers of the area, all converging simultaneously in the present moment (Table 1).

The first case, the courtyard/home, which has been home to a Syrian family for more than a decade, also serves as temporary accommodation for another international migrant group. The case not only displays, on a neighborhood scale, the modes of coexistence and tolerance among domestic and international migrant groups, navigating the realms of formality and spontaneity, stability and transience, residence and rootlessness, as well as recognition and

obscurity, but also exposes the fragility of migrants' home privacy. The case also serves as a compelling example of the homemaking practices of migrants within constrained physical conditions. The courtyard/home is a place where, in some instances, the agency of the migrant is asserted, resulting in the creation of hybrid socio-cultural spaces. In other cases, however, this agency is rendered useless, and the migrant resigns to their fate, feeling somewhat *out of place.*

The second case, Manisa Akhisar Hotel, on the other hand, has been home to many domestic migrants for decades, representing a continuation of communal life practices rooted in the Sephardic Jewish tradition dating back centuries. While appearing as just a hotel from the outside, Manisa Akhisar Hotel functions as an 'other space' for its residents, a substitute for the homes they have lost or opted not to retain due to various reasons. The hotel residents choose to manifest their agencies in much more subtle ways, mostly through seclusion and idleness. Nevertheless, this case undeniably stands out as one of the migrant spaces in Basmane that best illustrates the centuries-old migration history of the area.

Finally, the third case, Agora Park, plays an important role for various migrant groups, functioning as a gathering and socialization area. The park and the children's playground serve as a means of rebuilding a sense of belonging towards the area. Here, we can observe that vulnerable groups, such as Syrian migrant women who have limited participation in social life and visibility in public spaces, activate their agencies to watch over their children playing and engage in socialization with other migrant women, choosing to be visible in this space due to a heightened sense of safety and security. It is crucial to highlight that the park occasionally serves as a shelter space for irregular international migrants as well.

Table 1. A summary of the cases of the study (prepared by the authors).

	Name	Location (Nbhd.)	Publicness level	Resident migrant profile	Association with historic components of Basmane	Current usage status
(a)	Courtyard /Home	Pazaryeri	Private	International (Syrian, Somali)	adjacent to *İplikçi İsmail Dede Tomb* (early 18th cent. circa), derelict tomb structure reused as storage space by Syrian migrants	In use
(b)	Manisa Akhisar Hotel /*Cortijo*	Kurtuluş	Semi-private	Historically: Sephardic Jews Second half of the 20th cent. onwards: Domestic migrants	The hotel itself is an old *cortijo* building (allegedly 500 years old, Source: Uşaklılar, 2016), turned into a hotel in 1922.	Not in use
(c)	Agora Park	Yeni	Public	International + domestic	adjacent to the Agora of Smyrna (4th cent. BC), visual connection	In use

In conclusion, this study constitutes a documentation effort of three cases from three different historical neighborhoods of Basmane, focusing on the utilization of migrant agency in spatial (re)productions and the establishment of a sense of community and belonging. This documentation work explores the migration spaces of Sephardic Jews, crucial contributors to

the area's migration history over centuries, as well as domestic migrants from Eastern and Southeastern Anatolia, and international migrant groups like Syrians and Somalis. The focus is on understanding how these groups inhabit these spaces and, through their spatial practices, transform them into places of meaning and belonging. Simultaneously, the study exhibits the associations of its cases with historical layers of the area, extending across different centuries. Thus, this study chronicles the socio-spatial transformation of Basmane, bringing forward three migration spaces where the historical and contemporary intersect, with hopes of making a unique contribution to the literature on migration and space.

Declaration

The authors declare that they utilized the services of ChatGPT (OpenAI GPT-3.5) solely for translation and paraphrasing purposes in the creation of this paper. The authors take full responsibility for the content and any modifications made during this process.

References

Altınbulak, C. (2010). Bir avlu bir kent (Secret garden of the city). Izmir. https://youtu.be/SYX3iO-kTKE?si=P0AhvFh-WMBDpKD7, last access 20.01.2024.

Baban, F., Ilcan, S., & Rygiel, K. (2017). Syrian refugees in Turkey: pathways to precarity, differential inclusion, and negotiated citizenship rights. *Journal of Ethnic and Migration Studies*, *43*(1), 41–57. doi:10.1080/1369183x.2016.1192996

Bélanger, D., & Saracoglu, C. (2020). The governance of Syrian refugees in Turkey: The state-capital nexus and its discontents. *Mediterranean Politics*, *25*(4), 413–432. DOI:10.1080/13629395.2018.1549785

Belge, B. (2012). Handling sub-soil urban archaeological resources in urban planning, issues in İzmir historic city centre. *METU Journal of the Faculty of Architecture*, *29*(2), 331–350. https://doi.org/10.4305/METU.JFA.2012.2.15

Blunt, A., & Dowling, R. (2006). *Home*. Routledge. DOI: https://doi.org/10.4324/9780203401354

Chacko, E., & Price, M. (2021). (Un)settled sojourners in cities: the scalar and temporal dimensions of migrant precarity. *Journal of Ethnic and Migration Studies*, *47*(20), 4597–4614.

Chambers, I. (1994). *Migrancy, culture, identity*. Routledge, London.

Crowell, S. G., & Dreyfus, H. L. (1993). Being-in-the-world: A commentary on heidegger's being and time. *The Journal of Philosophy*, *90*(7), 373. DOI:10.2307/2940795

Daş, E. (2012). İzmir'de Üç Türbe. *Sanat Tarihi Dergisi*, *XXI*(1), 49–69.

Demirtaş-Milz-, N. (2020). Dar Gelirli Konut Alanlarında Artan Gündelik Korku ve Gerilimler: Sebep Suriyeli Göçmenlerin Varlığı mı, Yoksa Neoliberal Kentsel Politikaların Etkileri mi? *Turkish Studies-Social Sciences*, *15 Issue 4*(Volume 154), 1865-1885. DOI:10.29228/turkishstudies.42687

Etimoloji Türkçe (2024, January 19) https://www.etimolojiturkce.com/kelime/hane

Evrensel (2023, 17 December) https://www.evrensel.net/haber/386737/agora-parkindaki-afgan-multeciler-geri-gonderme-merkezine-gonderildi?a=5f967

Foucault, M. (1967). Dehaene & De Cauter (eds). Of Other Spaces, in *Heterotopia and the City*.

Güngördü, F. N. (2021). *Refugee Emplacement in Urban Areas: The Multi-Scalar Mobility Patterns and Locatıon Choices of Syrian Refugees in Izmir, Turkey*. Middle East Technical University, Ankara.

Ilcan, S., Rygiel, K., & Baban, F. (2018). The ambiguous architecture of precarity: temporary protection, everyday living and migrant journeys of Syrian refugees. *International Journal of Migration and Border Studies*, *4*(1/2), 51. DOI:10.1504/ijmbs.2018.091226

Işıklı, H. (2021). *Awareness of the Place: An Ethnographic Research into Izmir as a Place of Urban Memory in the Context of the International Izmir Festival*. Ghent University, Belgium.

İzmir İl Kültür ve Turizm Müdürlüğü (2023, September 4) https://izmir.ktb.gov.tr/TR-77098/izmir---agora.html

Karakaya Ayalp, E. and Yangın Kiremit, E. (2021). İzmir'in kapıları: Kent mültecilerinin göç hikayeleri ve yaşam koşulları. *Kent Akademisi*, Vol. 14 Issue 3, 659-686.

Kaya, G. (2020). Uluslararası göçmenlerin Kent İçi mekandaki İlişkileri: İzmir basmane oteller sokağı. *Social Sciences Studies Journal*, *6*(59), 1237–1250. DOI:10.26449/sssj.2182

Kayın, E. (2010). Tarihsel ve Yaşamsal Kesişmeler: Basmane Oteller Bölgesi. *İzmir Kültür ve Turizm Dergisi*, 40–42.

Kiray, M. T. (2004). *Osmanlı Kentlerinde Seferad Kültürünün Dönüşümünün Mimariye Yansımaları "İzmir Örneği."* 9 Eylül University, Izmir.

lamekân. (2016). *Beş asırlık yadigâr: Manisa-Akhisar Oteli / Cemal Yıldırım Daldal*. Izmir. https://youtu.be/_VCznI-vuyg?si=RCGOv7c11v3PdHjL, last access 20.01.2024.

lamekân. (2016). Beş asırlık yadigâr: Manisa-Akhisar Oteli / Salih Acar. Izmir. https://youtu.be/gNFa9zRiC8Y?si=EMU7FS9qhUlLilYd, last access 20.01.2024.

Lida, D., & Nehama, J. (1979). Dictionnaire du Judeo-espagnol. *MLN*, *94*(2), 424. DOI:10.2307/2906763

Massey, D. (1992). A place called home? *New Formations*, 17, 3–15.

Moreno, A. and Karkason, T. (2023). A transnational *millet* in the Jewish state: a judeo-Spanish diaspora between Israel and Turkey, 1948–1958. *Nations and Nationalism*, 29(3), 1093-1111. https://doi.org/10.1111/nana.12959

Nehama, J. (1977). *Dictionnaire du judéo-Espagnol. Les Éditions de la Lettre Sépharade.* Taflan Kitabevi.

Omaklılar, A. & Aktaş E. (2019). İzmir'deki mültecilerin evi: Agora Parkı. Evrensel. https://www.evrensel.net/haber/386678/izmirdeki-multecilerin-evi-agora-parki

Oner, A. C., Durmaz-Drinkwater, B., & Grant, R. J. (2021). Precarity of refugees: The case of Basmane-İzmir, Turkey. *Journal of Ethnic and Migration Studies*, *47*(20), 4651–4670.

Perşembe, Ö. & Özgür Gönç, D. (2018). *Basmane çevresel tasarım önerileri*. Izmir Büyükşehir Belediyesi Akdeniz Akademisi.

Quataert, D. (2005). *The Ottoman Empire, 1700–1922*. https://doi.org/10.1017/cbo9780511818868

Saraçoğlu, C., & Bélanger, D. (2019). Loss and xenophobia in the city: Contextualizing anti-Syrian sentiments in Izmir, Turkey. *Patterns of Prejudice*, *53*(4), 363–383. doi:10.1080/0031322x.2019.1615779

Saraçoğlu, C., & Bélanger, D. (2021). Governance through discipline in the neighbourhood: Syrian refugees and Turkish citizens in urban life. *The Canadian Geographer. Geographe Canadien*, *65*(4), 463–475. doi:10.1111/cag.12704

Sürgevil, S. (2011). *Basmane garı ve çevresi*. Metropolitan Municipality of Izmir Press.

Tasalı, O. (2019). *Basmane otelde yaşam*. Izmir. https://youtu.be/nsR6U5L7UiA?si=olWwep4if21FgCKJ, last access 20.01.2024.

Tekeli, İ. (2017). *İzmir-Tarih Projesi tasarım stratejisi raporu*. Metropolitan Municipality of Izmir Press.

Temür, U. (2022). *Reading İzmir's cortijos in Basmane as collective housing.* Yaşar University, Izmir.

Tuan, Y.-F. (2004). Cultural Geography: Glances Backward and Forward. *Annals of the Association of American Geographers*. 94: 729-733. https://doi.org/10.1111/j.1467-8306.2004.00427.x

Unesco (2023, 18 Aralık) https://whc.unesco.org/en/tentativelists/6471/

Uşaklılar, Ö. (2016). Beş asırlık yadigâr: Manisa-Akhisar Oteli. *Medium*. https://medium.com/lamekan/beş-asırlık-yadigâr-manisa-akhisar-oteli-688a9db38d5a

Ürük, Y., Pinar, İ. (eds.). 2013. *İzmir kent ansiklopedisi: İzmir'de idari ve mahalli yer adları. Vol. 1*. Izmir Metropolitan City Press.

Yıldız, A., & Uzgören, E. (2016). Limits to temporary protection: non-camp Syrian refugees in İzmir, Turkey. *Journal of Southeast European and Black Sea Studies*, *16*(2), 195–211.

Yıldız, A. (2021). Impact of the EU–turkey statement on smugglers' operations in the Aegean and migrants' decisions to engage with smugglers. *International Migration © 2020 IOM*, 59(4), 141–157. DOI:10.1111/imig.12767

Yorulmaz, A. (2022). *Tarihsel süreç içerisinde İzmir konaklama tesislerinin gelişimi, Basmane Bölgesinin toplumsal yapısının süreç içerisinde geçirdiği değişimler ve konaklama işletmeleri ile etkileşimi*. Master Thesis, 9 Eylül University.

Yucel, S. (2016). Minority heterotopias: The Cortijos of İzmir. *Architectural Research Quarterly*, *20*(3), 245–256.

Research Article

"SCAMPER" AS A SUPPORTIVE MODEL FOR TRANSFERRING DESIGN STUDIO LEARNING OUTCOMES

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Abstract In architectural education, when examining the curricula of architectural design studios, one can observe the learning outcomes that learners are expected to achieve. The learning outcomes intended to be achieved in architectural design studios may vary in their transfer to practice, depending on the teacher. This variability in transfer can lead to learners not fully acquiring the desired 'awareness, understanding, and skills'. With the increasing number of architecture schools today, these problems are becoming more prominent. To address these issues, a supportive teaching model, utilizing the "SCAMPER" applications, is proposed. This approach aims to enhance learners understanding and ability to generate diverse solutions to contemporary problems by actively utilizing and experiencing the learning outcomes acquired through traditional teaching models. The study focuses on the sustainability of learning outcomes in architectural design studios and the potential of the "SCAMPER" applications to improve the design process.

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Introduction

The backbone of an architectural education aimed at preparing individuals for the profession the learning outcomes to be taught each semester in architectural design studios. Learners who revisit and re-learn the learning outcomes of the previous semester throughout their educational journey will contribute to a deeper understanding that will enable them to find creative solutions to current problems. However, the repetition of learning outcomes from the previous semester is often prevented by operational differences and constraints such as time limitations. In such cases, the intended learning outcomes tend to be underemphasized and forgotten each semester.

Studying architecture involves a process with different learning outcomes. This process unfolds vertically over four years and horizontally through complementary studies each semester. With different learning outcomes expected for each semester, each stage of studio work should be assessed as a sequential and related instructional effort. Architectural design studios are integral to the approach and structure of undergraduate architectural programs (Özdamar&Goudarzi, 2021, pp. 67-81), which create a system characterized by progressive horizontal and vertical supervision. In this context, for the learner to effectively assimilate knowledge, the repetition of previously imparted learning outcomes in the vertical dimension of the four-year design process is crucial. This approach is considered essential to ensure that the learning outcomes, which include both knowledge and skills the learners are expected to acquire during their education, can be sustained.

A supportive teaching model that facilitates the transmission of intended learning outcomes within the learner-teacher dialog is needed in architectural design studios. In order to support the sustainability of the knowledge and skills of the learners, the "SCAMPER" applications, derived from the "SCAMPER TECHNIQUE", are linked to the synthesis stage in the horizontal dimension of the design process. In this context, learning outcomes are divided into knowledge-based and skill-based categories when designing a supportive teaching model for architectural design studios. Knowledge-based learning outcomes imply that the learner acquires a different set of knowledge horizontally from semester to semester, while skill-based learning outcomes imply that the same set of skills is developed and reinforced vertically from semester to semester.

Architectural Design Studio Learning Outcomes

Learning outcomes are statements that describe what a learner should know, understand, and be able to do at the end of a learning period (Donnelly & Fitzmaurice, 2005). In the Architectural Design Studio, the learning outcomes targeted in the four-year curriculum are expressed in terms defined in the European Qualifications Framework (EQF). These outcomes describe the learner's acquisition of knowledge, understanding, skills, and competencies at the end of the learning process. Learning outcomes refer to the knowledge, skills, and competencies that an individual possesses after completing a learning process, according to the Regulation on the Implementation Principles and Procedures of the Turkish Qualifications Framework (TQF). For

higher education, learning outcomes indicate what a person can know, do, and be able to do after successfully completing a higher education program.

Each discipline's undergraduate educational environment is an academic venue where learners acquire basic architectural planning and design sensibilities, knowledge, skills and abilities. It is a space where, through interactive academic dialogue, alternative design options are developed by employing the dialectical thinking inherent to these disciplines. It is an environment where the fundamental characteristics of these disciplines, such as the basic knowledge and skills of design sensitivity and awareness, are combined with other information that facilitates their professionalization. It is in this environment that the products of the discipline will be produced, and the learning outcomes will be tested. Architectural Planning and Design Studios (Council of Higher Education-CHE) collectively form this environment.

Knowledge and skill-based learning outcomes have been developed by institutions such as the National Architectural Accrediting Board (NAAB), the Royal Institute of British Architects (RIBA), and the Association for Accreditation of Architectural Education (MIAK). These accrediting bodies were selected because of NAAB's integration with the United States in the professional education process, RIBA's integration with the United Kingdom, and MIAK's role in determining professional competence at the national level. NAAB has established Student Performance Criteria (SPC). These SPCs define the knowledge and skills that architecture students must acquire. In the accreditation procedures, most recently updated in May 2015, the Student Performance Criteria are divided into four areas:

1. Critical Thinking and Presentation: Obtaining a well-rounded education that values lifelong curiosity, communicates using a variety of graphic tools, evaluates evidence, understands people, environment, and context, and recognizes the diverse needs of clients, communities and society.
2. Building Practices, Technical Skills and Knowledge: Designing buildings with well-integrated systems, understanding feasibility, integrating principles of environmental stewardship, effectively communicating technical knowledge.
3. Integrated Architectural Solutions: Synthesize variables from diverse and complex systems into an integrated architectural solution, require environmental stewardship in an integrated solution, evaluate options, balance the impact of design decisions across systems and scales.
4. Professional Practice: Understand architecture and building industry, distinguish valuable roles and major players in related fields, understand legal and professional responsibility and professional ethics. Each school is free to develop its own approach to achieving the goal of teaching these identified knowledge and skills (Tatar, 2015).

Within the standards, the Royal Institute of British Architects (RIBA), with a particular focus on the knowledge, skills and understanding that students need to acquire, highlights 11 general criteria that architecture programs will refer to in developing their pedagogical interpretations:

1. The ability to produce architectural designs that meet aesthetic and technical requirements,

2. A broad knowledge of the history and theory of architecture and of related arts, technologies, and human sciences,

3. Understanding the fine arts as they relate to architectural design,

4. Adequate understanding of urbanism, planning processes and planning competencies,

5. An understanding of the relationship between people and structure, between structure and environment, between related spaces, and between human needs at different scales,

6. An understanding of the profession of architecture and of the role of the architect in society, with a preliminary knowledge of social factors,

7. Understanding of methods of research and preparation of information in design projects,

8. Understanding of structural design in relation to building design, structural and engineering problems,

9. Understand the physical issues, technologies and functions of buildings that are necessary to ensure the conditions of comfort and protection of the indoor climate,

10. The design skills necessary to meet the needs of the users of the building within the constraints of economic factors and building codes,

11. Appropriate knowledge encompassing the translation of design concepts into buildings. This includes the combination of plans with comprehensive planning involving industries, organizations, regulations and procedures. As a general approach, it is intended that the method of achievement of the target knowledge and skills will be different from institution to institution (Tatar, 2015).

The knowledge, skills and competence areas that graduates should acquire are categorized under five main headings according to the accreditation conditions of MIAK:

1. Architecture-Design/Creative Thinking: Critical thinking skills, communication skills, research skills, design skills,

2. Architecture-History/Theory, Culture/Art: Understanding of global architecture, understanding of local architecture/cultural diversity, understanding of cultural heritage and preservation,

3. Architecture-Environment/City/Society: Sustainability skills, understanding of social responsibility, understanding of nature and humanity, understanding of geographical conditions,

4. Architecture-Technology: Understanding of life safety, structural systems, building physics, environmental systems, building materials and applications, building systems integration skills,

5. Architecture-Professional Environment: Programming and evaluation skills, comprehensive project development, understanding of construction costs and architect-client relationships, teamwork, project management, practice management, leadership, understanding of legal rights and responsibilities, understanding of professional ethics. (Tatar, 2015).

These knowledge and skill-based learning outcomes are repeated and reinforced throughout the horizontal dimension of the educational process. In this context, the knowledge-based outcomes contribute to the preparation of the "SCAMPER" questions for the applications, while

the skill-based outcomes play a role in determining the success criteria of the "SCAMPER" applications and in assessing the efficiency of the implementation process, which are:

1. Knowledge of basic design,
2. Understanding of society/user needs,
3. Knowledge of history/theory,
4. Knowledge of culture/art,
5. Urban design/environmental knowledge,
6. Sustainability knowledge,
7. Building/construction knowledge,
8. Professional practice knowledge.

To reinforce knowledge-based learning outcomes, it's important to separate and examine each one based on its topics and principles.

Skills-based learning outcomes include:

1. Critical and creative thinking,
2. Communication skills,
3. Research skills,
4. Design skills,
5. Multidisciplinary working skills,
6. Ability to think multi-dimensionally,
7. Ability to develop sustainable solutions to contemporary problems.

Skills-based learning outcomes are learning achievements that are repeated throughout the vertical dimension of the educational journey in each semester.

In this context, knowledge-based learning outcomes help to prepare "SCAMPER" questions for "SCAMPER" applications, while skill-based learning outcomes help to determine the success criteria for "SCAMPER" applications and to evaluate whether the implementation process is efficient or not.

"Scamper Technique" Teaching Model

The "SCAMPER TECHNIQUE" is the brainchild of Bob Eberle and was developed in 1971. The acronym "SCAMPER" is derived from the first letters of the steps that make up the technique. These steps are structured to develop creative problem-solving skills in both learners and teachers. Through these steps, brainstorming fosters the generation of diverse ideas around a given object or concept. According to Michalko (2006), each idea generated is the basis for another idea. According to Gann (2014), this technique, which is fun for both learners and teachers, is very important in developing creative thinking (Aydın & Çilci, 2020, pp. 223-262).

The steps of the "SCAMPER TECHNIQUE" are outlined below:

S - Substitution: The goal of this step is to generate alternative design sketches/ideas in place of the produced design sketch/idea. The basic question is: "What else can I produce in place of the design sketch/idea?"

C - Combine: This step aims to create a new design sketch/idea by combining different ideas/principles. The basic question is: "What other ideas/principles can I combine?"

A - Adapt/Adjust: This letter aims to make certain changes in the design sketch by adapting previous ideas to fit the current situation. The basic question is: "How can I differentiate the design sketch to adapt to changing conditions?"

M - Modify/Minimize/Magnify: This letter aims to make changes such as enlarging, reducing, or modifying the original form to produce an original design sketch. The basic question is: "By enlarging/reducing/modifying certain aspects in the design sketch, how can I get a different and unique idea?"

P - Put the Other Uses: This letter aims to use the principles that make up the design sketch in ways that go beyond their regular purposes. The basic question is: "Can I use the principles from my design sketch somewhere else? Where and how can I use them?"

E - Eliminate: This letter aims to improve the design sketch by removing some principles or forms from the system to make it more beautiful, successful, useful, etc. The basic question is: "Are there other things I can remove from the principles/forms to make the design sketch better?"

R - Reverse/Rearrange: The purpose of this letter is to consider alternative outcomes, applications, and ideas by rearranging the design sketch. Principles within the design sketch can be rearranged or the form can be reversed. The basic question is: "Are there other things I can reverse or rearrange from the original design sketch?"

The "SCAMPER TECHNIQUE" can be used by applying all letters (from S to R) in different examples and topics, or it can be implemented by using all letters in a particular question/problem or topic (Özyaprak, 2016, pp. 67-85). For example, students can be given a known narrative and asked to differentiate all the elements of this narrative (space, time, characters, events, etc.) using all the letters of "SCAMPER" to create their original narratives.

In this aim the points to consider for "SCAMPER" applications are:

- The number of students should not exceed 10-15, but this number can be increased depending on the students' familiarity with the technique,
- Students must be informed about the technique and practice should be conducted prior to application (Howard-Jones, 2002, pp. 215-226),
- In the application of the "SCAMPER" steps, when working with an object, preliminary work related to the use and introduction of the object should be carried out prior to the application (Eberle, 1996),
- Unusual and different questions are always interesting; attention should be paid to making the prepared questions interesting (Eberle, 1996),
- Students should be encouraged to think by asking questions such as "What else could be there? What else could be used? What else could be added? How else could it be changed?" (Weisberg, 2006),

- During the applications, students should be allowed to express their thoughts freely (Toraman & Altun, 2013, pp. 166-185),
- Students should be given quiet time to internalize their thoughts,
- During "SCAMPER" applications, ideas should be appreciated and noted if necessary; each idea expressed should be evaluated (Roger, 2011),
- Negative or mocking criticism of opinions should not be made. However, acceptable jokes should be used when appropriate, as humor adds to the fun aspect of the technique,
- During or after "SCAMPER", drawings should never be limited. The important thing is not to make beautiful drawings, but to reflect thoughts through drawings,
- The teacher should show enthusiasm and excitement during the applications (Gladding, 2011, pp. 1-7),
- Different "SCAMPER" sessions should not be conducted consecutively in a single day. "SCAMPER" sessions should be conducted at different times of the week,
- Questions should be formulated according to the level of the group,
- Individual applications should be implemented as a result of group research conducted collectively (Baş, 2018).

In architectural education, in architectural design studios that include the horizontal and vertical dimensions of the design process, it is necessary to encourage learners to ask questions in order to generate alternative ideas. Questions activate learners existing knowledge, increasing their learning capacity and the likelihood of acquiring new knowledge. Acquired knowledge is transformed into skill-requiring actions that trigger the emergence of new questions. It's important for learners to understand the subject matter with their own answers, while the teacher should ask guiding questions to direct the learner. In this context, this study presents a narrative where questions prepared using the "SCAMPER TECHNIQUE", related to learning outcomes targeted in the vertical dimension of design, are used in dialogues between the learner and teacher in the synthesis process, which is in the horizontal dimension of design.

In this context, the study presents a narrative in which questions prepared using the "SCAMPER TECHNIQUE" related to targeted knowledge-based learning outcomes are utilized in the dialogue between the learner and teacher during the synthesis process in the horizontal dimension of design.

Architectural Design Studios Design Processes

The backbone of design education is the architectural design studio, which serves as the primary course where the design process unfolds. In Turkey, in all universities, architectural design studios are structured in two dimensions: horizontal and vertical, within the four-year curriculum. Consequently, each studio, from the first to the fourth year, intensifies in content vertically, allowing the learner to transfer the accumulated design knowledge to the following year. Meanwhile, a semester-long studio content represents a horizontal dimension, functioning as a practical platform for acquiring, analyzing, synthesizing, and evaluating design knowledge and skills.

Asimow (1962) defines design as a cyclical process that progresses over time through iterative actions. Asimow divides the design process into two dimensions: the horizontal dimension and the vertical dimension.

1. Horizontal Dimension: It's a cyclical process that includes stages of information gathering, analysis, synthesis, evaluation, and application, and takes about 16 weeks within a design semester in architectural design studios.
2. Vertical Dimension: It denotes the sequential structure of design studios conducted over a four-year curriculum, with each term building on the accomplishments of the previous term.

It is shown in the table below within the framework of the Architectural Project Course in the Course Information Package of the Department of Architecture of Karadeniz Technical University (KTU, Trabzon, Türkiye) where the detailed course content process of design is carried out in architectural design studios for long periods of time in architectural education (URL 1).

Table 1. Architectural Design Studio Course Process.

Week 1	Announcement of project topics; preliminary information and discussions
Week 2	Gathering and sharing information about the subject.
Week 3	Gathering and sharing information about the subject; obtaining the program.
Week 4	Site visitation; describing and conducting analyses of the location.
Week 5	Initial sketches; discussions on ideas and concepts.
Week 6	Generation of alternative solutions.
Week 7	Selection of an alternative for development based on various criteria.
Week 8	Development stage
Week 9	Mid-semester study
Week 10	Overcoming structural issues
Week 11	Review of the project in terms of installations (water, electricity, heating, ventilation, sewage, and security).
Week 12	Development of the project's sections and elevations.
Week 13	Changing the scale of the project and reviewing all functional, structural, and other issues on a larger scale.
Week 14	Material, color, and texture revisions.
Week 15	Informing and discussing presentation methods and techniques.
Week 16	It is in the form of an end-of-term exam.

If we sum up the course processes that form the horizontal dimension of the design process, in order to transfer to the learner, the intended learning outcome in each period within the four-year curriculum in Architectural Design Studios, the design process is:

1. Information Gathering: Gathering and sharing information about the topic,
2. Analysis: Reviewing a sample project, creating a functional diagram, determining the needs program, studying the site,
3. Synthesis: Generation and development of initial ideas, elimination of structural problems, material, color and texture corrections,

4.   Evaluation: The presentation of the final product.

The horizontal dimension of the design process for a semester is planned with one and a half weeks for knowledge acquisition, one and a half weeks for analysis, ten weeks for synthesis and two weeks for evaluation. Since the synthesis phase lasts for ten weeks, it is considered to be the most comprehensive stage of the semester. Therefore, it is critical to implement a supportive instructional model that comprehensively addresses this phase in order to reinforce the desired learning outcomes. "SCAMPER" applications can be implemented by structuring the 16-week design process of architectural design studios, consisting of knowledge acquisition, analysis, synthesis, and evaluation stages, proportionally into 2 days each.

"Scamper" Applications for Architectural Design Studios

In architectural design studios, it is believed that the knowledge and skills acquired over the course of a semester through the traditional instructional model can be sustained in the horizontal dimension of the design process by repeating and incorporating them into "SCAMPER" applications.

The "SCAMPER" applications are structured using a design-based research methodology. The steps of the design-based research method are adapted to the "SCAMPER" applications as follows: problem definition, theoretical investigation of the problem, structuring of the "SCAMPER" applications, implementation, and evaluation of the results. If we structure the "SCAMPER" applications according to these steps, the steps are:

1.   Identification of the problem when we structure the "SCAMPER" applications according to these steps; the lack of repetition of knowledge-based learning outcomes in the vertical dimension of education in architectural training may lead to the inability of the learner to maintain knowledge and skills,
2.   Theoretical study of the problem, determination of the knowledge-based learning outcomes that should be transferred in each semester,
3.   Structure the "SCAMPER" exercises, prepare the "SCAMPER" questions based on the knowledge-based learning outcomes, determine the subject areas and participants, create the "SCAMPER" exercise schedule, prepare the informative presentation on the "SCAMPER" technique, and select relevant example projects to acquaint participants with the "SCAMPER" exercises,
4.   Implementation of the "SCAMPER" applications during the horizontal dimension of the training, which lasts one semester and is focused on the synthesis stage, the generation of alternative ideas using the "SCAMPER" technique,
5.   The evaluation of the results of the "SCAMPER" applications will conclude the conclusion of the application process through the measurement of whether there has been a change in the learner's knowledge and skills,

"SCAMPER" applications are initially structured after the identification and theoretical study of a problem. The following sections present a sample "SCAMPER" application design.

Preparation of "SCAMPER" Questions Based on Knowledge-Based Learning Outcome Topics

In structuring "SCAMPER" applications, it is essential to first determine the topic of the knowledge-based learning outcome that is to be reinforced. The content of the courses listed in the department's course information packages can be used to determine the learning outcomes. The course content articulates the goals and objectives of the course and identifies the topics of the targeted learning outcomes. In addition, the topics corresponding to each week are indicated in the weekly schedules. A "SCAMPER" application can be used to reinforce the material before moving on to the next topic after the traditional methods have been used to cover the topics.

When developing a sample "SCAMPER" application "SCAMPER" application, the learning outcome of "Knowing Fundamental Design Knowledge," intended to be taught in the first year of architectural design studios, can be selected because it is a knowledge-based learning outcome that should be reinforced each semester in the vertical dimension of the design process. Therefore, in order to determine the topics and principles of the learning outcome "Knowing Basic Design Knowledge," it is essential to review the content of courses related to basic design in the first-year course information package of the architectural departments. For example, in the course information package of the basic design course at Department of Architecture of Karadeniz Technical University (KTU, Trabzon, Türkiye), the contents include studies on visual communication and perception in visual arts, shape-ground relationship, space, form and geometry, space in architecture, design elements (line, direction, scale, texture, shape, color, value), and design principles such as harmony, contrast, proportion, unity, dominance, and balance in two- and three-dimensional compositions.

One of the fundamental topics observed is "Basic Design Elements and Principles" when examining the content related to 'Basic Design Knowledge. Therefore, in order to repeat and support the permanence of the learning outcome "Knowing Fundamental Design Knowledge," "SCAMPER" questions can be prepared based on the topic of "Basic Design Elements and Principles." In addition, questions can be formulated and applied by identifying the principles from other topics.

Accurate preparation of "SCAMPER" questions is a crucial aspect of an effective "SCAMPER" application. Students need "SCAMPER" questions to generate numerous alternative design sketches through the "SCAMPER" application based on their initial design sketches created during independent work activities.

For "SCAMPER" applications prepared in accordance with the "Know Basic Design Knowledge" learning outcome, it is essential to thoroughly review the topic of "Basic Design Elements and Principles" when preparing "SCAMPER" questions. Design elements encompass point, line, shape, space, scale, proportion, texture, and color, while design principles include proportion, dominance, balance, unity, repetition, harmony, and contrast. In architectural design studios, the scales where "basic design elements and principles" are most commonly used in designs are site plans and elevations. Other applied design departments

can determine the scales at which the Basic Design Elements and Principles are most commonly used in their studio courses.

The Participants and Defining the Workspace

The identification of participants for "SCAMPER" applications should be based on the assumption that the participants have achieved the targeted learning outcome due to the prerequisite knowledge of the "SCAMPER TECHNIQUE". It is expected that participants will have completed their first year of architectural education and will be familiar with the culture of architectural education for "SCAMPER" applications structured around the learning outcome topic of "Basic Design Elements and Principles" in the first year of architectural education. This will ensure that "SCAMPER" applications can be carried out in a more practical and easier way. Of course, in the second, third and fourth years of architectural education, "SCAMPER" applications can be implemented.

It is important to choose a scale (plan, floor plan, section, elevation) and location that is appropriate to the topic of the desired learning outcome when determining the workspace for "SCAMPER" applications. Selecting a location that is appropriate for these scales is critical to the effective implementation of "SCAMPER" applications, as the scale for "Basic Design Elements and Principles" is primarily site plans and elevations.

Preparation of the "SCAMPER" Application Program

The "SCAMPER" application program is designed for a maximum of 10 to 15 participants in the horizontal dimension of the architectural design studios, and spans a process of 16 hours, which is equivalent to four sessions. This process can be implemented within a semester at the end of each topic to reinforce concepts, or at the beginning or end of a semester to reinforce learning outcomes that have already been covered. Since first-year students may be unfamiliar with studio culture, "SCAMPER" applications tailored to the "Knowing Fundamental Design Knowledge" learning outcome may be more appropriate for implementation at the beginning of the next year.

During the knowledge acquisition stage of the horizontal dimension of the design process, the students will recall their existing knowledge about the subject matter of the previous learning outcomes. This helps participants to recall and warm up to the topic before engaging in the design process.

In this phase, students will examine sample projects and sites and perform the required analysis as part of targeted learning outcomes. Additionally, if deemed necessary, participants will be asked to create functional diagrams and requirements programs. In this way, the first 4-hour session of the workshop, which corresponds to the horizontal dimension of the design process, is completed with the knowledge acquisition and analysis phases.

For the synthesis, the student will create an initial design sketch within the scope of the assignment. This process covers the 4th to 6th hours of the program.

In order to facilitate the implementation of "SCAMPER" applications, it is necessary to briefly introduce the "SCAMPER TECHNİQUE" to the participants during the same session. After the

introduction of the "SCAMPER TECHNİQUE", participants are asked to generate alternative design sketches by asking "SCAMPER" questions related to the target learning outcome and the selected sample projects.

In the "SCAMPER" applications prepared for the Design Fundamentals learning outcome, after identifying the Design Fundamentals elements and principles in the site plan/elevation views of selected sample projects, subsequently, they generate alternative design sketches by posing "SCAMPER" questions.

As the synthesis phase continues, participants are tasked with generate alternative design sketches by asking "SCAMPER" questions based on the initial design sketches they generated while working freely. A significant number of sketches are generated while trying to answer all the "SCAMPER" questions. The third and fourth sessions, from hours 8 to 16, complete the "SCAMPER" application.

All sketches produced throughout the workshop will be submitted in the specified format, and the workshop process will conclude with a hearing of the participants' opinions about the process. This also completes the design evaluation phase in the horizontal dimension.

Preparing an Informational Presentation on the "SCAMPER TECHNİQUE"

In order for the participants to be able to carry out the applications, they must be informed about the "SCAMPER TECHNIQUE" beforehand. Thinking exercises using "SCAMPER" questions with some buildings are conducted after a short presentation.

Selection of Relevant Sample Projects For The Implementation of "SCAMPER" Applications

When selection of sample projects for the construction of "SCAMPER" applications, they should be related to the subject matter and the scope of the targeted knowledge-based learning outcome. The participants will ask the "SCAMPER" questions to the sample projects within the framework of the targeted knowledge-based learning outcome.

Generating Alternative Ideas With The "SCAMPER" Application

Through the free work activity, participants should generate alternative design sketches by asking "SCAMPER" questions that reinforce the themes of the targeted knowledge-based learning outcomes.

Students should be asked to identify the "Basic Design Elements and Principles" they used in their initial design sketches during the synthesis phase in the "SCAMPER" applications, prepared for the "Understanding Basic Design" learning outcome. Subsequently, a large number of alternative design sketches will be rapidly generated while using "SCAMPER" and searching for answers to "SCAMPER" questions. At the conclusion of the synthesis phase, the evaluation phase should be as a discussion with participants about whether there have been any changes in their knowledge and skills throughout the application process.

Conclusions

In recent years, with the advancement of technology and changing needs, questions of how to deliver architectural education have gained prominence. "SCAMPER" applications are expected to contribute to the sustainability of the knowledge and skills acquired by students in the search for alternative teaching models in architectural design studios, which are the backbone of architectural education. Models will be developed to support traditional teaching methods in this context. The "SCAMPER TECHNIQUE", within the framework of the teaching model, responds to the search for supportive models.

"SCAMPER" applications in the architectural design studio can be organized within the vertical curricular sequence that spans a term, reminding students at the beginning of a new term of what they have learned in the previous term or reinforcing what they have learned through traditional methods at the end of the term. "SCAMPER" applications can be implemented immediately after the subject has been taught by identifying the themes and principles of the targeted knowledge-based learning outcomes, without having to move on to another subject. In addition, these applications are 16 hours in length. Therefore, they can be scheduled as a weekend workshop within the semester. Thus, "SCAMPER" applications can be implemented at the beginning, middle and end of the semester. In this way, the desired knowledge-based learning outcomes in architectural design studios are quickly revisited and reinforced by the learners.

The "SCAMPER" applications can serve as a model that can be useful in other applied design education such as graphic design, industrial design, fashion design, environmental design, etc. For this purpose, in applied design education, it is necessary to separate the target learning outcomes for each semester into knowledge-based and skill-based, determine the topics and principles of knowledge-based learning outcomes, and prepare corresponding "SCAMPER" questions. After that, a "SCAMPER" application program will have been created and the learners will have been introduced to the "SCAMPER" applications with a short presentation on the "SCAMPER TECHNIQUE", which will allow them to reinforce their knowledge-based learning outcomes.

The key to success in this application is for the teacher to be knowledgeable about the subject matter of the targeted learning outcomes and to properly guide the learners by asking appropriate "SCAMPER" questions. The right questions are the key to getting students to recognize, understand, and transform knowledge into competence as they search for the right answer. With "SCAMPER" applications, the goal is not to find the right answers, but to create a free and flexible environment for creative thinking practice. It helps students to recall the knowledge they already have and thus use their skills to achieve an outcome. Having used "SCAMPER", learners acquire the ability to derive other creative solutions to current problems by generating their own "SCAMPER" questions throughout their educational and professional life.

After using "SCAMPER", it is expected that the learner will be able to;

- Develop critical and creative thinking skills and the ability to ask questions,

- Enhance the ability to design and communicate in a flexible and open working environment,
- Think through "SCAMPER" questions while analyzing samples to improve research skills,
- Actively participate in group work environments to cultivate multidisciplinary work skills,
- Gain ability to provide sustainable solutions to contemporary issues,
- Enhance the ability to think multi-dimensionally by having the opportunity to reinforce previously learned but potentially forgotten learning outcomes in subsequent periods.

"SCAMPER" applications provide the teacher with a hands-on approach to the transfer of targeted learning outcomes. The teacher can make the process more efficient and faster by planning and preparing the structure and questions of "SCAMPER" applications in advance. This allows the teacher to quickly review and reinforce each of the targeted knowledge-based learning outcomes with "SCAMPER" applications shortly after they have been covered.

References

Aydın, İ., Çilci, N. (2020), SCAMPER Yönlendirilmiş Beyin Fırtınası Tekniğinin 5. ve 6. Sınıf Öğrencilerinin Yaratıcı Yazıları Üzerindeki Etkisi. *Iğdır Üniversitesi Sosyal Bilimler Dergisi*, *21*, 223-262.

Asimow, M. (1962). *Introduction to Design.* New York: Prentice-hall.

Baş, Ş. (2018). *Sanatsal Yaratım Sürecinde SCAMPER Tekniğinin Kullanılması* (Doctoral thesis). Ondokuz Mayıs University, Samsun, Turkiye.

Donnelly, R. and Fitzmaurice, M. (2005). Designing Modules for Learning. In: G. O'Neill, S. Moore. and B. McMullin, B. (Eds.), *Emerging issues in the Practice of University learning and teaching.* Dublin: All Ireland Society for Higher Education.

Eberle, B. (1996). *SCAMPER on: Games for imagination development. Creative games and activities for imagination development.* UK: Prufrock Press Inc.

Gann, D. A. (2013). A few considerations on critical thinking instruction, *The Journal of Saitama City Educators 3*(3), 14-18.

Gladding, S. T. (2011). Using creativity and the creative arts in counseling: An international approach. *Turkish Psychological Counseling and Guidance Journal*, *4*(35), 1-7.

Howard-Jones, P. A. (2002). A dual-stage model of creative cognition for supporting strategies that foster creativity in the classroom. *International Journal of Technology and Design Education*, *12,* 215–226.

Özyaprak, M. (2016). Yaratıcı düşünme eğitimi: SCAMPER örneği. *Journal of Gifted Education and Creativity, 3*(1), 67-81.

Özdamar, B. B. & Goudarzi, M. S. (2021). Temel tasarımda eğitiminde kazanılan bilginin iç mimarlık ikinci sınıf tasarım stüdyosuna düşünsel aktarımı. *USBAD Uluslararası Sosyal Bilimler Akademi Dergisi 3*(7), 1683-1705.

Michalko, M. (2006). *Thinker toys. A handbook of creative thinking techniques.* Berkeley, Ca: Ten Speed.

Roger, V. (2011). *SCAMPER: A tool for creativity and imagination development for children.* New York: Center for Creative Leadership.

Tatar, E. (2015). *Mimarlık eğitiminde sürdürülebilir bir model önerisi.* (Doctoral thesis). Eskişehir: Anadolu Üniversitesi.

Toraman, A. & Altun, S. (2013). Application of the six thinking hats and SCAMPER techniques on the 7th grade course unit "Human and Environment": An exemplary case study. *Mevlana International Journal of Education*, 3(4), 166-185.

Weisberg, R. W. (2006). *Creativity: Understanding innovation in problem solving, science, invention, and the arts*. Hoboken, NJ: Wiley and Son.

Url 1: https://katalog.ktu.edu.tr/dersbilgipaketi/course.aspx?pid=586&lang=1&dbid=574218

CHE: Council of Higher Education

EQF: European Qualifications Framework

MIAK: Association for Accreditation of Architectural Education

NAAB: National Architectural Accrediting Board

RIBA: Royal Institute of British Architects

TQF: Turkish Qualifications Framework