

Evaluation of Architectural Programme Approaches through Competitions with the Scope of Future Housing

Sevgin Aysu Balkan^{1*} and Prof.Dr. Berna Üstün²

¹ Research Assistant, Department of Architecture, Faculty of Architecture and Design, Eskişehir Technical University, Eskişehir, Türkiye, sevginaysuoryasin@eskisehir.edu.tr

² Department of Architecture, Faculty of Architecture and Design, Eskişehir Technical University, Eskişehir, Türkiye, bustun@eskisehir.edu.tr

ABSTRACT

In the 1960s, the architectural programme was seen as a concept that focused on efficiency and functionality, along with the modernist movement. However, since the 2000s, it has been underlined that it is an experience-oriented concept. The idea that the concept of space is not only a volume but also a whole with its abstract elements is emphasised. Therefore, the architectural programme process is closely related to how we perceive the space and the transmitting role and movements of our body in this situation. The architectural programme becomes a concept that can change and transform with these components, rather than being a framework that limits the movements of the body. A new framework of architectural programme conception has been created based on the spatial conceptions of theorists/architects/thinkers such as Bernard Tschumi, Henry Lefebvre, Steven Holl, Louis Kahn and Martin Heidegger. The aim of the study is to create a theoretical structure that expresses that the architectural programme consists of action and movement components. The method of the study is to analyse the architectural competitions on the theme of houses for the future within the scope of the theoretical framework. In this context, the future potentials for the action and movement components of the architectural programme were discussed. In addition, it is among the results of the study to reveal the current keywords that are the source of the design ideas of the houses of the future.

Keywords: Architectural Programme; Architectural Competitions; Future Spaces; Action; Motion

1. Introduction

Guadet (1909) defines the architectural programme as the list of services that an architect must consider when designing a building. Although it is clear that the list is including a description of the relationships between spaces, there is no mention of how the spaces should be organised. The architectural programme began to be accepted as a specific discipline in the 1960s, and different views have emerged with regard to its place in the process of architectural design. Ideas about how the architectural programme should be a process have been developed by theorists such as Edward T. White (1972), William T. Peña (1969), Henry Sanoff (1977), Robert G. Hershberger (1985), Dunna Duerk (1993) and Edith Cherry (1998). Sanoff (1977) described the act of architectural programming as "problem identification" followed by analysis and data collection in his book *Methods of Architectural Programming*. Edward T. White (1972) emphasises that it can play a role in strengthening communication between stakeholders.

As more complex buildings were designed in the 1960s, the spatial needs and contents became more differentiated. By changing the forms of production in the field of construction, Industry 3.0, or the third industrial revolution, has created a breaking point in the practice of architecture. It has allowed new building materials and techniques to emerge, thus enabling the production of complex building contents. This situation has

highlighted the need to organise the relationship between the spaces well. For this reason, the concept of the architectural programme has begun to be considered in the context of how the building will have a design content, how it will be produced and how it will be used. It can be expressed as a method for proposing good solutions in the context of inter-spatial relations.

According to Hershberger (1985), the architectural programme is associated with questioning, establishing relationships and getting to the essence. It should have a function of discovering and revealing the values of the society-customer-user and the architect. According to Cherry (1998) and Duerk (1993), the architectural programme should be handled with an approach that will strengthen the communication between human and physical environment without losing its design specificity. Therefore, today the concept of architectural programme cannot be considered as a list of spatial needs, a physical and concrete process that needs to be formulated. Instead of rigid approaches, perspectives that focus on how the network of relations between spaces will develop come to the fore. Ideas that can change and bend according to changing lifestyles (without fixed and rigid rules) begin to emerge.



Figure 1. Summary of the study's method

The theoretical background of the study is formed by the current architectural programme discussions and conceptions of space mentioned in the next section. The aim of the study is to examine the theoretical approach developed in the architecture programme through architectural competitions that envisage innovative and experimental living spaces for the future. In this context, it is intended to indicate how the perspective on the design of programmes will change in the future. The methodology of the study is an analysis of architectural competitions that generate ideas for the home interiors of the future. The results of national and international architectural competitions about interior space of housing have been analysed in print publications and internet sources (Figure 1). The available results were analysed in tables and statistically evaluated within the framework of the theoretical infrastructure created within the framework of the study.

2. Different Approaches and Current Debates in Architectural Programme Phenomenon

Today, the concept of the architectural programme has become a more interactive and integrated field with design, capable of stretching and transforming the space where necessary. Tschumi (1996) succinctly outlined the current situation as follows: "The architect designs the set, writes the script and directs the actors. He stated that the architectural programme should be handled as a concept that can flex according to the dynamics of the day, moving away from a dictating perspective. It is seen that the widespread understanding is now moving away from the approach of 'conditioning the design' and towards 'designing the conditions'. Steven Holl (2000) mentions that the way we organise space, when reconsidered with new ideas and dreams, will turn into a situation that captures the present and references the future. Emphasising that the presence of the body and experience are very important, he states that the presence of our body is the

essence of our spatial perceptions. He mentions the concept of "lived space" by associating the understanding of the "body being in the world" with perception. According to Holl (2000), the relationship between the experienced body and space is cinematographic. The body experiences space in changing perspectives along the movement route. The temporal sequence of images is also a key element in the overall experience. Therefore, the relationship between space-movement-actions is important when constructing space.

As Yazgan (1996) notes, a number of factors contribute to the creation of space. The architectural programme outlines the requirements and organisation of the space, but it is not possible to anticipate all potential uses. The representation of Sarah Wigglesworth's dining table in Figure 1 provides an excellent illustration of spatial experience. In the initial phase, a representation of a table, designed and prepared in accordance with specific guidelines, is presented. In the second part, the interaction of the subjects with the table through actions and movements during the meal was expressed. In the final phase, it can be concluded that the situation after the experience at the table is not the same as the initial situation. It is seen that the table, which is organised according to certain rules, changes after interacting with the user and the places of the items are differentiated.

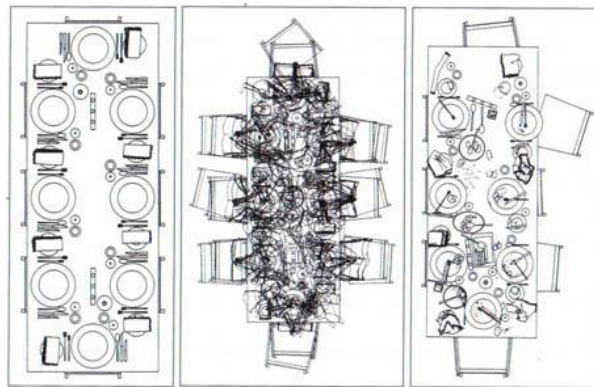


Figure 2: Comparison of the situation before and after the experience at the dining table
- S. Wigglesworth and J Hill (url-1)

Louis Kahn and Ngo (1998) emphasised that it would be inaccurate to define the architectural programme only as a means of designing the physical relation of space. First of all, it is necessary to understand the abstract relations of space and the fiction of the interior design. He indicated that issues such as budget planning, project location and requirements programmes should be given secondary consideration. From Heidegger's perspective, concrete facts demonstrate the theoretical potential for specific scenarios and provide supporting evidence (Sharr, 2007). However, it is inadequate for defining complex concepts such as space and place. For this reason, he underlined that space should be understood in terms of the concepts of "building" and "dwelling", as well as its mathematical and geometrical status. He stated that if we cannot support these concrete elements with experience, we cannot go far enough in understanding the space. Besides that, Lefebvre's theorem of social space identified a triad of perceived, designed and lived space (Lefebvre, 2014). The lived space part of this triad includes users and their actions. It is crucial to understand that the construction is much more than an external container for actions. Action fragments and momentary encounters have the potential to bring together different layers to form the architectural programme.

Erzen (2015) suggests the architect or designer acts as a choreographer. It is important to note that the body and movement are key elements that contribute to the spatial definition. According to Güner (2012), the components used to define space should include movement and actions based on British cultural anthropologist Victor Turner's ideas on



'performance'. Our body is the way we interact with space and it needs to be addressed beyond the physical condition. In addition to its physical dimension, it also has the potential to transform the spatial fiction both perceptually and relationally. Furthermore, it is important to consider the role of time in relation to movement. The flow of time can be the determinant of spatial fiction by directing our perceptions.

In his book 'Architecture and Disjunction' Tschumi (1996) reinterpreted the term 'architectural programme' by considering actions, events and the movement of the user. From his point of view, 'without a programme, without action, without an event, there is no architecture' (Tschumi, 1996). Furthermore, the close relationship between everyday life, action and movement is also mentioned. With the intersection of these three elements in different and unexpected ways, new paths will emerge for designers, as well as new definitions of architecture (Tschumi, 1996). The programme, in its transformed form, can be described as a concept that is designed, predicted and on which we can make changes according to possible scenarios. It is the stage where spatial scenarios are created by constructing predictions. It is a set of spatial relations produced by the designer. The architectural programme has evolved from its passive position to an activator that organises the space and manages the process of constructing spatial relations. The changing role of the programme is addressed through the action and movement components within the framework of the ideas of the theorists mentioned.

2.1. Action - Space - Architectural Programme Relations

In defining space, Alexander (1977) proposed a framework comprising action segments and fragments. It has been mentioned that these action sections can only be enriched with the abstract elements of the space to produce meaningful products. As stated by Löw (2008), actions can be transformed into spatial elements. Erzen (2015) states that the practice of architecture is the embodiment of actions. According to Foucault's description of the event, the fact that the space is in a structure that enables the daily activities of the body is not enough to make it a space. The critical point is that it contains a fiction that can utilise the possibilities of the void. According to Tschumi (1996), when the necessary conditions are met, every space (in between) creates an opportunity for human actions, and these actions can reach the quality that will enable the formation of spaces. Therefore, the production of space should be constructed by taking into account certain actions and their relations.

The construction should be more than a mere boundary that encloses the actions (Kolatan, 2000). Architecture is an area where emphasis should be placed on expressing the flow of life and actions, as outlined by Tschumi (1996). The relationship between action and space may vary according to the type of connection established with the user. Tschumi (1996) defines this relationship as symmetric if it pits two parties against each other. If one of the parties of 'human and space' dominates over the other, it is labelled as asymmetrical. Action and space are two concepts that interfere with each other. Although they exist independently of each other, they influence each other when they intersect.

Stability of Actions in Space

The situation between the sequence of actions and the space points to different relationships in a programmatic sense. In some programme designs, there are instances where the sequence of actions overlaps with the entire space. The intertwining of these two narratives can be likened to the working principle of a machine. The sequence of events and the sequence of space can become completely dependent on each other and become meaningful with the existence of each other. Tschumi (1996) defines this situation as reciprocity. In this approach, actions coincide with the space. The relationships were pre-defined, and the actions that would take place in each location were clearly outlined.

Dynamic Actions in Space

The concept of flexibility is important for the organisation of space to adapt to changing conditions and to be handled together with user requirements. Hertzberger (1991) advocate flexible constructions in contrast to the idea that form emerges as a result of the construction of functions. Flexibility can be achieved not only through physical means, but also through producing different solutions by organising the totality of relations in space. Norberg-Schulz (1968) also mentioned that flexibility can be achieved basically in two ways. The first is to provide controlled growth or shrinkage by adding and subtracting volumes. The second is to review the elements and relationships and to bring a new interpretation. Yürekli (1983) on the other hand, while investigating design approaches for flexibility, created decision points through planning, building technique and building systems.

2.2 Body - Space - Architectural Programme Relations

Our initial contact with the concept of space is through our physical movement and body. Isozaki and Asada (1999) mention that when designing a building, all the design thoughts in our minds are mobile like organic bodies. It is mentioned that many images are created in our minds and that these images are not fixed, but their possibilities are considered. As soon as it is decided how the design will be, these images are fixed and cease to be mobile. However, this point of view brings the following question to mind; could movement be more than just a phenomenon that expresses the design process? Erzen (2015) stated that this relationship may be in another dimension and that when we perceive the architectural space, we experience it abstractly by moving with our body around it.

It is undeniable how important the role of our body is in establishing our communication and interaction with the world. It is only through our bodies that we can reach and communicate with beings outside our own existence (Merleau-Ponty, 2004). In Vitruvius's architectural trilogy, the concept of 'utilitas' (usefulness) can be more accurately expressed 'appropriate spatial arrangement' for the body Rowland and Howe (2001) In other words, the concept of the body stands at an important point since the beginning of architecture. According to the architectural approaches of the period, the relationship between space and body continued to be an important data by addressing different aspects.

Space Through Physical Experiences

The Cartesian approach is a physical methodology for analysing the relationship between objects and people. This system of thought, based on the philosophical teachings of Descartes, argues that the language of nature should be mathematics (Descartes, 1989). In the Cartesian understanding, space is considered as a phenomenon that is not perceived and touched by sense organs. It reduced the body to thinking in terms of geometrical principles such as order, form and proportions. The main problem with this approach is that it treats the body outside of movement and time.

The differentiation and diversification of forms of production after the Industrial Revolution inevitably affected the practice of architecture. A number of standards have been established arising from the need to produce things faster and more efficiently. For example; Le Corbusier (2004) Modulor is a system that accepts the body of a person of 183 heights as a criterion. The book by Neufert and Neufert (1936) also includes specifications, standards and space - installation - equipment aspects. While creating all these standards, it has an approach that accepts all bodies in the same size. Reductions made through this idealised (strong, robust and often masculine) body can lead to impractical designs.

Space Through Interaction

Heidegger criticised the Cartesian idea of space produced by Descartes and treated space as a point of experience and interaction. In his view, the mathematical measurement of



space should be a means rather than an end. In the text entitled "Building, Dwelling and Thinking", it is stated that it would not be a correct approach to perceive buildings only as the product of a construction process or only as an object (Sharr, 2007). If there is no experience, interaction and contact between dwelling and the body, it cannot be said that a proper relationship with space can be established. This way of thinking had a great influence on those who thought about understanding space.

Merleau-Ponty (2004) identified the idea of 'being in the world' with 'perception' and put the concept of 'living body' at the centre of the analysis of perception. Our body is the condition not only for the spatial and temporal blending of perception, but for all the acquisitions, accumulations and expressive processes of our world. Bergson, Paul, and Palmer (2004) also considers the body as a centre at the point of interaction with the environment. The objects in the environment affect our body and this effect is reflected back to the objects and space. Zumthor (2006) refers to the concept of atmosphere in which he tries to design the space with all its components. The practice of architecture differs from other design fields in terms of organising and creating an order and cannot be reduced to physical elements only.

2.3 Time - Space - Architectural Programme Relations

Physically, the concept of time is expressed in terms of days, months and years, which we can define in our minds in terms of mathematics and the rules of occurrence. The first meaning that the concept of space evokes in our minds is at the level of the space it physically occupies with its dimensions and measurements. According to Siegfried Giedion, space is defined as 'void' and time is a phenomenon that tries to be articulated to this void as an element of movement. According to Cartesian philosophy, space and time are concepts with separate contents. In the historical process, they have always been treated in different ways Koca and Hale (2017). However, Anthony Giddens argues that in pre-modern societies there was no distinction between these two concepts due to their dynamic content. He stated that in order to physically express the concept of time before the use of mechanical clocks, it was necessary to ask the question 'where' and to establish a connection. Since the concept of time was not abstract in pre-modern societies, it could only be defined in terms of the content or order in the sequence of successive events. Bergson expressed this relationship in his book *Matter and Memory* as follows: 'Time, when perceived as an unlimited and homogeneous medium, is nothing but the ghost of space haunting the consciousness of the thinking man' (Bergson et al., 2004). It has been possible for these two concepts to form their own content and to be handled separately from each other thanks to technical possibilities.

When we see and transfer an object, we look at it from one point and draw a picture of how it looks from our point of view. But with the movement of the body or the object, our view of the object changes each time, and accordingly our transmission will differ. In line with these data, three dimensions may be insufficient when reflecting the reality of the object. In order to accurately and adequately express the reality of the object, it is necessary to draw an infinite number of perspectives from an infinite number of viewpoints. According to (Zevi, 1978), it is the time element that provides us with an infinite number of images and perspectives, and it is claimed to be the fourth dimension according to the cubism movement and some perspectives.

Rhythmic Cyclic and Linear Time

As Kevin Lynch (1976) points out, there are some cyclical events in which our body is involved, such as brain activity, breathing, heartbeat, blinking, sleep. There is also a rhythm to vital activities such as sleep patterns, hormone production, muscle movement and growth. If we enlarge our scale a little more and take a look at the universe, we observe that it consists of rhythms that support the cycles of our body. For example, the phases of the moon, the movement of the sun, the seasons. Plato claims that the universe has a spherical shape and relates the formation of celestial bodies to their circular motion.

It is said that each celestial body exists with its own movement and that this creates cycles such as days, months and years, and the concept of time emerges (Johansen, 2004). In cyclical time, events follow one another and proceed in a repetitive rhythm. This situation limits the concept of time and makes it difficult for innovation to emerge. Hegel (2003), on the other hand, talks about the concept of linear time constructed by the relationship between beginning and end.

According to Aristotle, time does not progress in a linear way and it is not a concept that can be measured. The movements of celestial bodies proceed in a natural motion. It is necessary to determine time together with the movements of the sun (Copleston, 1997). Gilles Deleuze stated that 'When time becomes a straight line, it no longer limits the world, but traverses it. Time no longer submits to something going on inside it, on the contrary, everything outside of it has submitted to time' (Deleuze, Baker, & Kovanlikaya, 2007). His point was that the fact that time is not a series of events will have the effect of increasing its dominance over the universe. Otherwise, he mentions that everything remains time bound.

Abstract Time (Time based on positions in space)

Deleuze disagrees with the notion of associating time with the linearity that results from sequentiality (Rodowick, 1997). He states that linearity is insufficient to characterise time. He mentions that more accurate explanations can be provided with the concept of movement. It is said that the present, past and future are in constant motion through our mind. Abstract time can be defined as the state of natural, logical succession that moves away from the linear logic of our sense organs and the cyclical rhythms of our body, merges with our own experiences and becomes unique. Einstein's theory, supported by Aristotle's ideas, is that 'Space is nothing by itself. There can be no absolute space. Space can only exist with the energy it contains.' It has been said that the concept of time by itself does not mean anything (or in other words, it is nothing). It was said that the concept of time gains meaning with the events and phenomena that take place and that it can only be explained in this way. Heidegger stated that "time is in things that can change; change is in time " and that the movement of time can be explained together with experiences (Sharr, 2007). The relationship with the events was tried to be established with the phrase "The basic phenomenon of time is the future". Time itself is crucial for designing space, but there are many definitions for understanding time (Grosz, 2001). If the designed thing can bring a new interpretation of time besides the usual orders, it means that it can create its own space.

3. Evaluation of Future Scenarios Through Current Architectural Programme Approaches

Within the scope of this study, current architectural programme approaches are presented from the perspective of theorists and by detailing their components. The theoretical background of the study is formed by the current programme debates and understandings of space mentioned in Chapter 2. Due to their potential for foresight and imagination, architectural competitions that generate ideas for future housing have been evaluated. It was thought that competitions on the theme of future housing would be a good sampling tool for imagining the direction of the architectural programme concept. Seidel (1990) describes architectural competitions: 'a method which, through the discretion of a qualified and impartial jury, provides both access to the best designs and talent and the opportunity for public recognition of participants and supporters'. The competitions allow for the development of numerous solution proposals on the same subject, in the same location, and addressing the same problem. Spatial proposals are evaluated by an independent jury and the results are exhibited. Professionals with different levels of experience and education participate in the competitions and produce their ideas on an independent platform. From this point of view, it supports the formation of a professional competition environment and the production of original ideas. Therefore, it creates an experimental environment for architectural practice.



In the study, national and international architectural idea competitions that offer housing proposals for the future were scanned from printed and internet sources. While determining which competitions to analyse, websites such as www.archdaily.com, www.bustler.net, www.competitions.archi, designboom.com, archicompensation.net where the results of international competitions are announced were searched. Furthermore, platforms such as archoutloud.com, competition.volzero.com, future-house.org, eleven-magazine.com, which regularly organise competitions for the future and attempt to produce original architectural ideas, were examined. The results were limited to the years 2014-2019 in order to avoid any potential bias due to the unique spatial circumstances presented by the Covid-19 pandemic and to ensure the inclusion of the most up-to-date recommendations. The similarity of the content of the competitions in terms of the architectural programme will ensure consistency in the evaluation process. For this reason, the focus is on the available results of the competitions organised on the housing of the future.

As a result of the evaluations, Moontopia (2017), Micro to Macro - A New Living Revolution (2018), The Last House of Mulholland (2017), The Home (2018), D3 Housing Tomorrow (2016), Future House - Modular House (2018) competitions were reached. The available results of the projects that were ranked in the aforementioned competitions were analysed and the content, prominent idea and design approach of each project were reflected in the tables. The projects mentioned in the tables were examined in terms of the current architectural programme approach. They were evaluated in terms of action, body and time, which are defined as sub-components of the programme.

Table 1. Moontopia (2017) Competition Results and Evaluation (url-2)

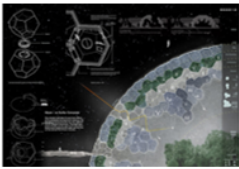
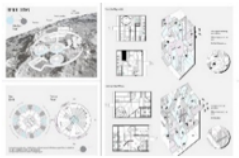
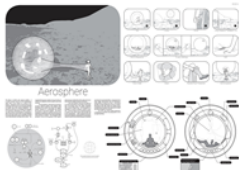
MOONTOPIA (2017) COMPETITION RESULTS AND EVALUATION		ARCHITECTURAL PROGRAM COMPONENTS					
		ACTION		MOTION			
				BODY		TIME	
PRIZE/ PROJECT NAME/ PROJECT IMAGE/ DESIGN TEAM	DESIGN IDEA AND KEYWORDS	STABILITY OF ACTIONS IN SPACE	DYNAMIC ACTIONS IN SPACE	SPACE THROUGH PHYSICAL EXPERIENCES	SPACE THROUGH INTERACTION	RHYTHMIC CYCLIC AND LINEAR TIME	ABSTRACT TIME
1.st prize - TEST LAB   Monika Lipinska, Laura Nadine Oliver, Inci Lize Ogun	Shaping according to changing pressure articulation 3d printer tech self-productivity						
2nd prize – MOMENTUM VIRIUM  Sergio Bianchi, Jonghak Kim, Simone Fracasso, et al	life in moon orbit self-sufficiency efficiency reproducibility						
People's Choice Award – MODULPIA  Alessandro Giorgi, Cai Feng, Siyuan PanEsteban Analuiza	sheltered life underground self-sufficiency sustainability modular						
Honorable Mention – UPSIDE DOWN  Ryan Tung Wai Yin, Ho Wing Tsit Teresina, Joshua Ho	efficient habitats on the moon with artificial gravity modular cyclical movements new public spaces						
Honorable Mention – AEROSPHERE  Stephanie Stiers	creating a temporary shelter by surrounding the body privacy body measurements self-sufficiency						

Table 2. Macro to Micro (2018) Competition Results and Evaluation (url-3)

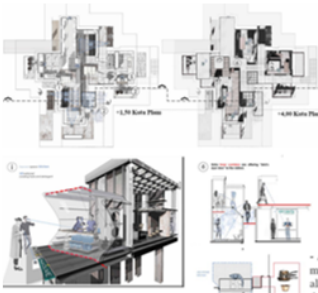
MACRO TO MICRO – A NEW LIVING REVOLUTION (2018) RESULTS AND EVALUATION		ARCHITECTURAL PROGRAM COMPONENTS					
		ACTION		MOTION			
		STABILITY OF ACTIONS IN SPACE	DYNAMIC ACTIONS IN SPACE	BODY		TIME	
PRIZE/ PROJECT NAME/ PROJECT IMAGE/ DESIGN TEAM	DESIGN IDEA AND KEYWORDS			SPACE THROUGH PHYSICAL EXPERIENCES	SPACE THROUGH INTERACTION	RHYTHMIC CYCLIC AND LINEAR TIME	ABSTRACT TIME
1.st Prize – THE AD HOUSE  Chariton Lazarides	The relationship between social media and housing privacy transparent media surfaces social relations						
Runner Up Prize – MODULAR FUTURE  Vladislav Kulikovskiy, Arsen Khairov, Margarita Podgornaya & Ildar Ildarkhanov	shelter spaces that can be produced quickly and adapted self-productivity adaptability 3d printer tech modular						
Micro People's Choice – THE BENEFICIAL URBAN PARA-SITE'  Christina Dahdaleh, Lauren Poon, Caoimhe Loftus & Michael Dillon	shelter spaces that can be shaped according to the flow of life urban parasite adaptability modular						

Table 3. The Last House of MulHolland (2017) Comp. Results and Evaluation (url-4)

THE LAST HOUSE OF MULHOLLAND (2017) COMPETITION RESULTS AND EVALUATION		ARCHITECTURAL PROGRAM COMPONENTS					
		ACTION		MOTION			
				BODY		TIME	
PRIZE/ PROJECT NAME/ PROJECT IMAGE/ DESIGN TEAM	DESIGN IDEA AND KEYWORDS	STABILITY OF ACTIONS IN SPACE	DYNAMIC ACTIONS IN SPACE	SPACE THROUGH PHYSICAL EXPERIENCES	SPACE THROUGH INTERACTION	RHYTHMIC AND LINEAR TIME	ABSTRACT TIME
1.st prize – AMBIVALENT HOUSE  Jason Payne, Michael Zimmerman et al	mass rotating around a single carrier moving mass variable image flexible space						
2nd prize – HOLLYWOOD HILL  Luis Fernando Garcia Ojeda	space formed around the courtyard multi-surface cover sustainability self-sufficiency						
3rd prize – THE LAST HOUSE  Yohannes Baynes, Noriaki Hanaoka	the unity of traditional and technological space passive energy systems double walled mass use of slope						
Honorable Mention – THE 4 POINTS OF A NEW HOME  Gary Polk, Jungjae Suh	suggestion for a place that controls life technology relationship with the environment living space alternatives						
Honorable Mention – HOUSE  Po Yao Shih	housing that allows different actions with moving mass moving mass variable image flexible space						

Table 4. Home (2018) Competition Results and Evaluation (url-5)

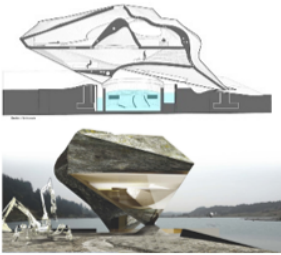
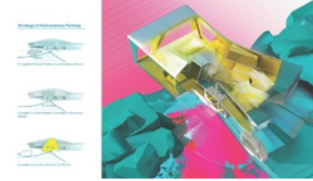
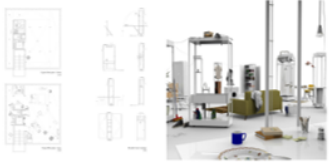
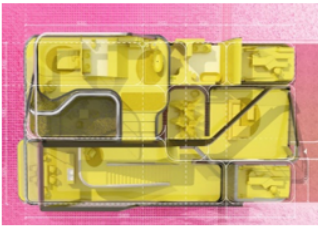
HOME (2018) COMPETITION RESULTS AND EVALUATION		ARCHITECTURAL PROGRAM COMPONENTS					
		ACTION		MOTION			
				BODY		TIME	
PRIZE/ PROJECT NAME/ PROJECT IMAGE/ DESIGN TEAM	DESIGN IDEA AND KEYWORDS	STABILITY OF ACTIONS IN SPACE	DYNAMIC ACTIONS IN SPACE	SPACE THROUGH PHYSICAL EXPERIENCES	SPACE THROUGH INTERACTION	RHYTHMIC CYCLIC AND LINEAR TIME	ABSTRACT TIME
Overall Winner– INTEGRATED APPARATUS  Massimiliano Orzi, Studio Orzi	building with robots from local materials smart home systems self-sufficiency artificial intelligence						
Innovation Award – ABOVE THE TIRE  Dazhong Yi	a proposal that combines vehicle and house technology autonomous vehicles mobility						
Adaptability Award – THE NOT-FOR-LONG HOME  Stav Dror, Liran Messer	space redefined with moving objects mobility variable image flexible space						
Honorable Mention – UNDER ONE ROOF  Bryce Taylor, Adin Rimland	A social space design suburban context balloon frame construction public space						
Honorable Mention – LIVING AS MOVING AND MOVING AS LIVING  Sabrina Xueyan Li	moving as living and living as moving moving mass flexible space user requirements						

Table 5. D3 Housing Tomorrow (2016) Competition Results and Evaluation (url-6)

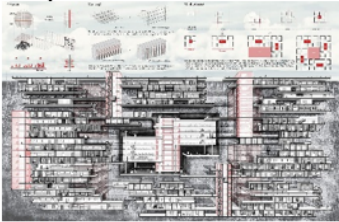
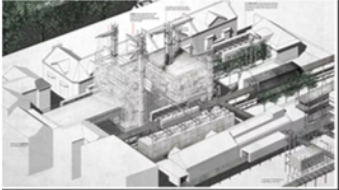
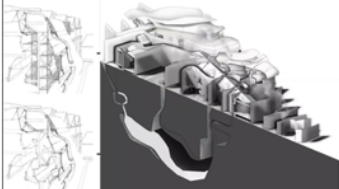
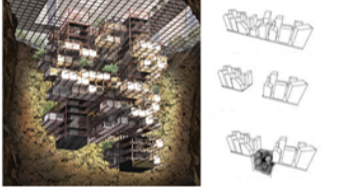
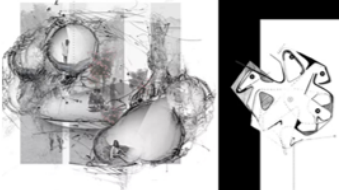
D3 HOUSING TOMORROW (2016) COMPETITION RESULTS AND EVALUATION		ARCHITECTURAL PROGRAM COMPONENTS					
		ACTION		MOTION			
				BODY		TIME	
PRIZE/ PROJECT NAME/ PROJECT IMAGE/ DESIGN TEAM	DESIGN IDEA AND KEYWORDS	STABILITY OF ACTIONS IN SPACE	DYNAMIC ACTIONS IN SPACE	SPACE THROUGH PHYSICAL EXPERIENCES	SPACE THROUGH INTERACTION	RHYTHMIC CYCLIC AND LINEAR TIME	ABSTRACT TIME
1.st prize – LIVING THE EDGE  Kim Min Kyu, Lee Chang Han et al	shelters built on the borders of the city population density modular gridal fiction						
2.nd prize – LIVING DEVICE  Andreas Prokopiou	technology-driven microchip shelters non-lieu smart home building technologies						
3.rd prize – CONDITIONING LAYERS  Cristos Xenefontos	urban fabric developing inside the wall micro housing climate crisis stratification						
Honorable Mention – INVERTED HOUSING  Kim Gi Ryong, Jang Han et al	Housing suggestions that utilize unused spaces in the city modular urban voids easy to produce						
Honorable Mention – COMMUNITY DWELLINGS  Rafaela Neokleous	housing shaped according to changing user requirements modular mobile units flexible space						

Table 6. Future House (2018) Competition Results and Evaluation (url-7)

FUTURE HOUSE MODULAR HOUSE (2018) COMPETITION RESULTS AND EVALUATION		ARCHITECTURAL PROGRAM COMPONENTS					
		ACTION		MOTION			
				BODY		TIME	
PRIZE/ PROJECT NAME/ PROJECT IMAGE/ DESIGN TEAM	DESIGN IDEA AND KEYWORDS	STABILITY OF ACTIONS IN SPACE	DYNAMIC ACTIONS IN SPACE	SPACE THROUGH PHYSICAL EXPERIENCES	SPACE THROUGH INTERACTION	RHYTHMIC CYCLIC AND LINEAR TIME	ABSTRACT TIME
1.st prize – TI- HO MODULAR HOUSE  Danica Tomic	a new housing proposal in the unity of humans and nature modular mobility minimal contact with ground						
2.nd prize – PRESENT FOR THE FUTURE  Maria Sofia Guarente et al	housings that can relate to each other and surfaces modular easy to produce recycleable						
3.rd prize – CONDITIONING LAYERS  Rong Han, Hoijing Li	housing that can be easily produced and shaped according to user requirements steel carrier system modular affordable house						
Honorable Mention – BRIDGE HOUSE  Wong Kachun Alex	housing that brings together different user types and lifestyles privacy social relations user requirements						
Honorable Mention – LIFE CYCLE HOUSE  Katarzyna Prylowska et al	housing shaped within the framework of the changing life cycle user requirements modular articulation						

The results of future-oriented housing competitions are discussed in terms of their potential to question existing spatial relations and to bring new interpretations fictionally. In total, 28 projects within the scope of 6 competitions were examined in terms of the sub-components (action - body - time) of the current architectural programme approach. In this context, it is seen that flexible proposals expressing dynamism in terms of action are in the majority (Figure 2). It has been demonstrated that the interior spaces are no longer divided into discrete sections to form the total space. It is observed that no specialised and clearly demarcated volumes are defined for actions. The relationship between these volumes is perpetually undergoing redefinition, with spatial boundaries becoming increasingly fluid. It can be said that flexible spaces that prepare the infrastructure for actions and facilitate the flow of the interior space are more common (%89,3), rather than an architectural programme approach from parts to the whole (%10,7). It seems that there are also approaches that layer the elements that make up the space and enable more complex relationships to be established by overlapping the actions. In the housing of the future, we encounter holistic space and fictions that allow actions that can be shaped according to the cycle of life. It can be said that the dynamism of actions will have more say in determining the flow and organisation of interior space in the future.

When the movement element is examined, we can talk about dynamism in terms of the concrete and abstract elements of the space. In some proposals, the components of the space move physically and redefine spatial relations. The intersections of spaces with each other permit the emergence of different relationships. The movement of the masses constantly redefines the relationship between the environment and the building, creating different experiences. In some proposals, mobility is handled as abstract elements of the space flowing into each other in terms of architectural programme. The movement component of the architectural programme is examined in two parts: body and time. Upon analysis of the proposals in terms of body, it was found that 28.5% of them addressed the relationship between space and body in terms of its physical aspects and dimensions. A review of the proposals indicates that the understanding of space as defined by the concept of "through experience and interaction" is the prevailing view in 71.5% of projects (Figure 2). This situation has paved the way for the formation of different relationships between the user and the space. In addition to the experience and interaction of the body, there are proposals that bring different interpretations in terms of social relations and public spaces. In addition, technologically enriched proposals bring different perspectives to the communication between space and body.

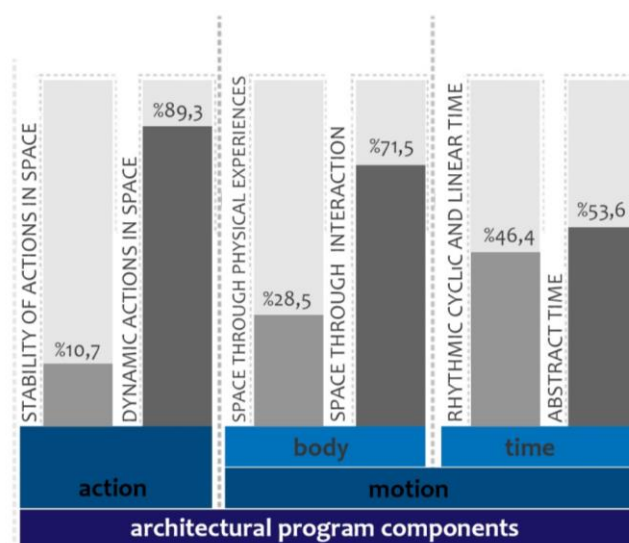


Figure 2. Examining the housing of the future according to the new components of the architectural programme

When evaluated in terms of time, 46.4% of them have a cyclical and linear time structure. It was observed that the rate of suggestions evaluated in the abstract time frame was 53.6% (Figure 2). It is seen that the interior layout and time flow of the dwelling is planned in detail in some of the suggestions examined. In some proposals, cyclical and rhythmic time is considered as rhythm and flow in its own internal organisation. Within the framework of this cycle, the actions of users are tightly planned. In some proposals, cyclic time is considered as modularity. The flow in the whole space is organised by adding and removing modules in the context of the life cycle. In addition to the projects that have the potential to bring different interpretations in terms of cyclic time, the majority of the proposals (53.6%) were evaluated in the context of abstract time fiction. In some proposals, all or part of the mass is mobile. In this case, the building tries to create its own abstract time fiction with its movement. In some proposals, the life cycle is referenced once more, yet the temporal planning is not presented in a linear sequence. In such examples, spatial relations can be constructed differently according to the changing user demands throughout life. Therefore, it can be said that it brings its own interpretation in the context of abstract time fiction in terms of changing shape according to the user's requests. It can be stated that the majority of the projects are attempts to construct spatial relations through abstract time interpretations.

4. Conclusion

The architectural programme is a process that predicts how the space will be constructed and makes a preliminary study of how to offer solutions to design problems. Within the scope of this study, it has been tried to create an approach on how the architectural programme can be handled together with the changing concept of space. It was stated how the architectural programme uses its changing and transforming power, and examples were made to see how it will be used in the future. As underlined by the theorists mentioned in the study, the programme should be considered as a whole with its action and movement components. This study investigates the role of action and movement in constructing and originalizing programmatic relations, asking questions such as "can the action and movement component turn into a component that constructs spatial relations in the future?", "what effect will the action and movement components have in the future?" In the majority of the projects examined, concerns such as the consumption of resources in the future and pollution, industrialization, and uncontrolled population growth are mentioned. It is envisaged that the built environment will transform into compact orders that are introverted, self-sufficient and unrelated to the external environment. Within the framework of these conditions, it is stated that new programmatic solutions should be produced at different scales. According to the situations mentioned in the projects, it indicates that in the future, the relationship established with the place cannot be handled through environmental elements such as climatic conditions, topography, transport, etc. in the sense we use today. It contains clues that we will discuss different internal dynamics and situations in the context of technology-oriented solutions. The issue of what kind of environment is depicted in the suggestions developed determines how the relationships with the environment and the user will develop. Another issue addressed within the scope of the evaluated projects is the future trajectory of the user-designer relationship. The majority of the recommendations discussed within the scope of the study consist of modular units (Figure 3). How the parts will come together and how the reinforcement elements will be organized is left to the user. This situation changes the dimensions of the relationship between the designer and the user, making the role of the designer in the architectural design and programme process questionable.

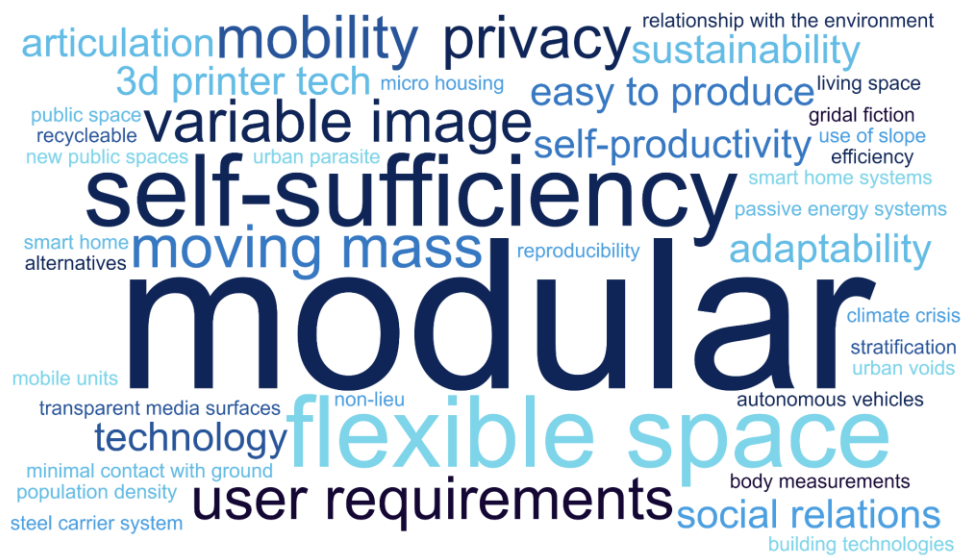


Figure 3. Word cloud created from recurring keywords in competition results

Many of the projects addressed within the scope of the competitions are proposals that will point to the change of architectural design and construction processes. There are also suggestions for the future use of 3D printers and smart home systems. In addition, in most of the proposals produced, portable proposals that can be adapted to every place and every condition have been emphasised. Within the scope of all these suggestions, the changes that come with technology have been addressed in different aspects. Nowadays, the digitalization process that emerged after the Covid 19 pandemic and its aftermath has very quickly become part of our lives. All these changes have caused important paradigm shifts in the production of space. In a rapidly digitalizing world, it is a matter of curiosity how architectural programme processes can be handled with action-movement components in the future.

Acknowledgments

The results of this research are the outputs of Sevgin Aysu Balkan's Master's thesis, which was conducted under the supervision of Prof. Dr. Berna Üstün.

References

- Alexander, C. (1977). *A pattern language: towns, buildings, construction*: Oxford university press.
- Bergson, H., Paul, N. M., & Palmer, W. S. (2004). *Matter and memory*: Courier Corporation.
- Cherry, E. (1998). *Programming for design: From theory to practice*: John Wiley & Sons.
- Copleston, F. (1997). History of Philosophy. translated by Bahauddin Khorramshahi. In: Tehran: Scientific and Cultural Publications and Soroush Publications.
- Corbusier, L. (2004). *The Modulor and Modulor 2* (Vol. 1): Springer Science & Business Media.
- Deleuze, G., Baker, U., & Kovanlıkaya, A. (2007). *Kant üzerine dört ders*: Kabcacı Yayinevi.
- Descartes, R. (1989). *Passions of the Soul*: Hackett Publishing.
- Duerk, D. (1993). Architectural programming: Information management for design. (*No Title*).
- Erzen, J. N. (2015). *Üç habitus: Yeryüzü, kent, yapı*: Yapı Kredi Yayınları.
- Grosz, E. (2001). Architecture from the Outside. *Massachusetts Institute of Technology*.
- Guadet, J. (1909). Éléments et théorie de l'architecture, t. II. *Paris, Librairie de la construction moderne/Aulanier*, [1902], 215.
- Güner, D. (2012). Performans ve edimsellik olarak mimarlık. *Ege Mimarlık*, 81, 24-29.

- Hegel, G. W. F. (2003). Tarihte Akıl, çev. Önay Sözer, *Kabalcı Yayınları*, 2.
- Hershberger, R. G. (1985). Values: A theoretical foundation for architectural programming. In *Programming the Built Environment (Routledge Revivals)* (pp. 7-12): Routledge.
- Hertzberger, H. (1991). *Lessons for students in architecture* (Vol. 1): 010 Publishers.
- Holl, S. (2000). *Parallax*: Princeton Architectural Press.
- Isozaki, A., & Asada, A. (1999). Benzeştirilen Köken, Benzeştirilen Son. *Anytime Konferans Bildirileri Kitabı, Mimarlar Derneği, Ankara*.
- Johansen, T. K. (2004). *Plato's natural philosophy: A study of the Timaeus-Critias*: Cambridge University Press.
- Kahn, L. I., & Ngo, D. (1998). *Louis Kahn: Conversations with Students*: Princeton Architectural Press.
- Koca, S. K., & Hale, J. (2017). Conceptualizing "Thirdplace": Exploring Embedded Narrations in Between a Spatial Trilogy//Üçüncü/Öteki Yer'Üzerine Bir Kavramsallaştırma Denemesi: Mekansal Bir Trilojinin İçinde Saklı Hikayelerin Keşfedilmesi. *Megaron*, 12(3), 488.
- Kolatan, Ş. (2000). Tschumi ile konuşma. *Bernard Tschumi*, 11-24.
- Lefebvre, H. (2014). The production of space (1991). In *The people, place, and space reader* (pp. 289-293): Routledge.
- Löw, M. (2008). The constitution of space: The structuration of spaces through the simultaneity of effect and perception. *European Journal of Social Theory*, 11(1), 25-49.
- Lynch, K. (1976). *What time is this place?* : mit Press.
- Merleau-Ponty, M. (2004). *The world of perception*: Routledge.
- Neufert, E., & Neufert, P. (1936). *Architects' data*: John Wiley & Sons.
- Norberg-Schulz, C. (1968). *Intentions in architecture*: MIT press.
- Peña, W. (1969). Problem Seeking/New Directions in Architectural Programming. *Houston: Caudill, Rowlett and Scott, Texas Architects*.
- Rodowick, D. N. (1997). *Gilles Deleuze's time machine*: Duke University Press.
- Rowland, I. D., & Howe, T. N. (2001). *Vitruvius: Ten books on architecture*: Cambridge University Press.
- Sanoff, H. (1977). *Methods of Architectural Programming (Routledge Revivals)*: Routledge.
- Seidel, A. D. (1990). Design competitions receive mixed reviews. *Journal of Architectural and Planning Research*, 172-180.
- Sharr, A. (2007). *Heidegger for architects*: Routledge.
- Tschumi, B. (1996). *Architecture and disjunction*: MIT press.
- White, E. T. (1972). *Introduction to architectural programming*: Architectural Media.
- Yazgan, K. (1996). *A research on Bernard Tschumi's architectural intentions, suggestions and their sources of inspiration*. Middle East Technical University,
- Yürekli, F. (1983). Mimari tasarımda belirsizlik: esneklik/uyabilirlik ihtiyacının kaynakları ve çözümü üzerine bir araştırma. *İstanbul, İTÜ Mimarlık Fakültesi*.
- Zevi, B. (1978). *The modern language of architecture*: Australian National University Press.
- Zumthor, P. (2006). Atmospheres: Architectural environments. surrounding objects. In *Atmospheres*: Birkhäuser.

Internet References

- Url-1: <http://www.ediblegeography.com/dining-disorder/>
- Url-2: https://www.archdaily.com/803985/9-visions-for-lunar-colonies-selected-as-winners-in-moontopia-competition?ad_medium=gallery
- Url-3: <https://bustler.net/news/tags/macro-to-micro/847869/6705/winners-of-eleven-s-10th-international-competition-macro-to-micro-are-announced>
- Url-4: <https://www.archoutloud.com/lhom-results.html>
- Url-5: <https://www.thehomecompetition.com/2018-results.html>



Url-6: <https://bustler.net/news/4933/d3-housing-tomorrow-2016-winners-explore-the-future-of-urban-residential-design>
Url-7: <https://future-house.org>