Nanotechnology Perceptions
ISSN 1660-6795
www.nano-ntp.com

Designing a Music House for the Elderly with an Approach to Environmental Comfort and Enhancing Social Interactions

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Music has long been regarded as one of the most important cultural symbols in any society. Modern societies are no different, as music, as an art form, plays a vital and influential role in people's everyday lives, cultural events, and leisure activities. As a result, civil society managers have consistently sought to promote and showcase this valuable art through effective planning and investment, considering their available resources. A key aspect in this effort is the planning and design of spaces that not only symbolically and directly reflect the cultural values of a society but also address the basic needs of enthusiasts, especially the elderly. This research adopts an analytical and descriptive approach. The results suggest that the quality and nature of sound depend on two factors: the resonance chamber and the materials used in musical instruments. Elements such as size, shape, resonance chamber, and material quality impact the sound characteristics. This explains why metal-string guitars differ from nylon-string guitars and why both have a distinct sound compared to an oud. Any change in either of these factors affects the vibration duration and sound quality. This idea is also relevant to architecture. A musical instrument amplifies the sound it creates, and architectural spaces can similarly be seen as large-scale instruments. The design of a musical instrument is based on two essential components: the quality of the materials and the resonance chamber for sound vibration. When architecture is viewed as a musical instrument, the sounds produced within or by the space contribute to the overall architectural experience. This perspective is in line with either the Apollonian or Dionysian viewpoint, depending on its implementation. The key factor in this method is acoustics.

Keywords: Design, Music House, Elderly, Environmental Comfort, Social Interactions.

Introduction

Aging is a process that begins after the age of 65. One of the challenges encountered by older adults is the memory decline. Dementia or Alzheimer's disease is also a common issue among the elderly. Some individuals experience Parkinson's disease, while others face a deterioration in hand-eye coordination due to aging. In our society, the age range of 65 to 79 is considered the start of old age. Among the many challenges faced by the elderly, feelings of loneliness are particularly significant, as they often experience isolation for various reasons, such as physical limitations, the loss of loved ones, and weakened social ties (Zabihi et al., 2009).

The notable increase in life expectancy, coupled with a decline in fertility rates over the past century, has resulted in a growing elderly population globally. Iran is experiencing this trend as well. According to the 2016 national census, 9.3% of Iran's population was aged 60 or older. Additionally, a 2015 report from the World Health Organization (WHO) highlighted Iran as one of the countries anticipated to see the highest growth rate in its elderly population in the coming years. According to this report, the elderly population in Iran is expected to exceed 33% within the next 35 years (Soltan Zadeh et al., 2013, p. 57). A commonly heard phrase about aging is "these years are the golden years." While this viewpoint is widely embraced, it is equally important to consider other facets of aging. A branch of sociology, demography, has predicted that within the next fifty years, the elderly population worldwide will surpass that of the younger generation (Kaplan, 1995).

Research shows that using music as a therapeutic tool, especially for the elderly, offers several benefits. It aids in recalling past events, provides a non-verbal means of expressing a wide range of unconscious emotions and thoughts, enhances abilities, identity, and self-perception, and improves mood by reducing anxiety and depression. Moreover, music therapy promotes better overall health, decreases the need for medical visits, and significantly alleviates depression, loneliness, and enhances general well-being (Burack, 2007). Studies also reveal that music is a powerful emotional outlet, fostering joy, relaxation, and relief from pain and suffering. It creates an ideal setting for social interaction and collaboration. In general, music therapy plays an essential role in diminishing loneliness, fear of the future, psychological distress, feelings of alienation from family, grief, and excessive dependence on others (Bodrafshan, 2007; Haji Nejad, 2010).

The study "Assessing the Needs of the Elderly in Urban Spaces" by Fanaei (2006) concluded that design directly impacts the motivation of elderly individuals to live actively, emphasizing that the physical environment is inherently connected to the psychological well-being of older adults. Similarly, the article "Examining the Factors Influencing Social Capital and Its Relationship with Quality of Life Among the Elderly in Ilam" by Kasani et al. (2014) identified key factors such as attachment to personal living spaces, ease of access, opportunities for social gatherings, walkability, physical activity, and educational opportunities as crucial to elderly satisfaction. Additionally, the study "Thermal Perception of the Elderly, Application Patterns, and Satisfaction with Outdoor Spaces" by Young et al. (2016) introduced a conceptual framework to assess and understand the factors influencing thermal comfort among the elderly. The findings indicated that there is no strong significant correlation between individual factors and overall satisfaction with the environment.

As previously noted, there is an increasing need for spatial designs that adhere to architectural standards while creating a pleasant environment for the elderly. Consequently, the design of a Music House for the Elderly focused on environmental comfort and enhancing social interactions, is viewed as a step toward providing a more desirable space for elderly individuals

to experience comfort and connection. Residency does not imply complete stillness or stagnation; in nature, rest and movement are balanced and intertwined. Similarly, the senior living environment should always embody a sense of flow and movement (Ali Al-Hesabi, 2012). The built environment addresses human biological needs such as shelter, and safety, including physical and psychological security, as well as the need for belonging and respect through environmental symbolism, and aesthetic needs through visual beauty (Kianpour Ghahfarokhi, 2011, p. 96). The design of a Music House for the Elderly should aim to provide both mental and physical comfort, ensuring that individuals with any limitations or disabilities can use the space according to their abilities. The primary aspects of spatial quality include social engagement, activity and form, accessibility and connectivity, and comfort and tranquility. Thus, the goal of this research is to design a Music House for the Elderly that prioritizes environmental comfort and fosters social interactions.

Theoretical Foundations of the Research

Music, Theories, and Perspectives

In Iranian indigenous or folk music, the early arts, beliefs, emotions, and the overall life of the ancestors can be revisited, while the manifestations of nature play a central role in shaping Iranian folk music, particularly through its songs. Many of these songs reference familiar local myths and stories. In ancient times, there was a profound and strong connection between poetry and music. A notable characteristic of Iranian folk music is its use in religious ceremonies. Historical records reveal that the Magi during the Achaemenid period used to sing their prayers to melodies (Aini Far, 2005).

Art is one of the most elusive human concepts. The number of distinct and often contradictory definitions of art is as vast as the number of people who attempt to define it, making art appear more personal than societal. Each individual defines and understands art based on their knowledge and perception. Art seems to serve as a means of expression, a way to convey personal definitions to others, to express the inner self, and to make it manifest in the external world for others to comprehend. Throughout history, humans have continuously sought various methods to express and share their beliefs and ideals in different forms. Undoubtedly, none of these efforts have been as significant as art in revealing the essence of human thought and intellect throughout the history of human culture and civilization. Ideas are expressed through drawing, playing, or creating, and as "Bend To Kroeche" defines art, it refers to the inner self with a specific meaning. He states, "The miracle of art lies not in the embodiment of form, but in its perception and meaning. Embodiment is a technical matter related to skill and craftsmanship." He compares this definition to the act of representing the boundary between the inner and outer, or in other words, the meaning of embodiment. When we have a verbal utterance and visualize a form or sculpture, or discover a melody, the full expression of art emerges, and nothing else is required. Architecture, in general, is conceived and realized to address existing conditions. These conditions may be purely functional or reflect varying degrees of social, economic, political, and even emotional and idealistic intentions. Therefore, the creation of architecture is fundamentally a process of problem-solving or design. As an art, architecture goes beyond merely responding to functional needs; it delves deeper into the essence of the building. The physical manifestations of architecture generally correspond to human functions.

The Connection Between Music and Architecture

There are two perspectives on music. The **Apollonian perspective**, where the left hemisphere of the brain is activated, focuses more on the theoretical aspects of music, or in other words, analyzes music from a scientific viewpoint. The **Dionysian perspective**, where the right hemisphere of the brain is activated, is an emotional approach that emphasizes using musical theory to evoke feelings (Sajadi, 2012). Architectural theorists have had extensive discussions on the relationship between music and architecture, focusing on the two aforementioned branches. This research addresses five relationships between these two fields.

1. **Architecture as a Sequence of Harmonic Spaces**

Pythagoras was the first to introduce the concept of musical ratios. He believed that music could be represented as pure mathematical ratios, which are the same as cosmic ratios. Renaissance architects applied these musical ratios in their architecture because they believed that, just as the human body is a reflection of God and its proportions were created by divine will, architectural proportions should also reflect cosmic order. This approach aligns with the Apollonian perspective, which is more intellectual than sensory. The most important factor in this method is the ratios (Yang, 2008).

Robert Lawler, a mathematician and architect, believes that geometry deals with pure form, and philosophical geometry draws out any asymmetrical shape from within its conceptual structure. This is how the fundamental secret of visible creation is revealed. Plato's saying, "Anythus Geometri," means "The act of God always has a geometric aspect," which corresponds to an inscription that, according to Plato, was placed at the entrance of his academy: "Let no one enter here who is ignorant of geometry." The essence of this inscription was that understanding his teachings, at least in terms of the auditory aspect, could truly and genuinely occur only through a "mimicry" of divine activity (Behrouz Far, 2010). A deeper understanding of numbers and considering their celestial forms leads to a spiritual perception of the world, where our designs and influence on nature take on a spiritual and uplifting structure. Numbers and lines, beyond their external forms, have an inner and celestial nature. Each one is a symbol that guides us toward realms beyond the material world. Adhering to these inner forms results in the beauty of our designs and artistic works. In nature, the celestial and earthly forms of numbers and geometry coincide, and their ratios are perfectly aligned. This is why nature is beautiful and naturally pleasing to humans (Behrouz Far, 2010).

2. **Architecture as a Catalyst for Movement**

Elizabeth Martin states, "Architecture is the art of designing in space, and music is the art of designing in time." Movement in architecture connects the two units of time and space. The question then arises: How can architectural elements be placed in space to shape a person's movement pattern? This approach aligns with the Apollonian perspective, which is more intellectual than sensory. The most important factor in this method is rhythm (Katcher, 2002). The term "Building as a Catalyst for Movement" comes from the book *Body, Memory, and Architecture* by Kent Bloomer and Charles Moore. In the chapter "Body Movement," it explains that our bodily movement is influenced by the dynamics of space. The space we create is designed in a way that follows the natural rhythm of our movement (Hur, 2010).

Architecture as a Musical Instrument

The structure of a musical instrument depends on two factors: the quality of materials and the chamber that facilitates sound vibration. If architecture is considered as a musical instrument, the sounds produced within the space or created by its users contribute to the overall architectural experience. This approach connects to either the Apollonian or Dionysian

perspectives, depending on its application. The most important factor in this method is acoustics (Potter, 2006). The quality and character of sound depend on two factors: the vibrating chamber and the choice of materials. These factors, including size, shape, the vibrating chamber, and material quality, affect the sound. This explains why metal-string guitars sound different from nylon-string guitars, and how the sound of both differs from that of a lute. Any change in either of these two factors will impact the vibration time and sound quality (Seligman, 1992). This is also true for architecture. A musical instrument amplifies the sound produced, and architectural spaces can be considered large-scale instruments.

Environmental Comfort and Vitality of Space

The concept of vitality underwent a long process before being utilized in urban planning principles. Since 1960, vitality has been seriously addressed in empirical research, and by 2003, approximately 3,300 studies on the topic were recorded in the global database, recently reviewed by Diener (1999) (Wilson, 2008: 179).

In 1973, vitality became a scientific term included in international psychology abstracts. In some academic articles, vitality was equated with "well-being," "mental well-being," and "life satisfaction." The term now shares many similarities with the concept of quality of life, and in many texts, the two concepts are used interchangeably (Morancho, 2003). If a distinction is made between these two terms, vitality can be described as the informal probabilities related to life in a specific place, while quality of life can be summarized without referring to a place and typically addresses abstract topics. Most research on both terms has focused on defining the words and offering the best methods for measuring and assessing them. Many scholars have worked to refine and differentiate these two concepts, but the majority believe that vitality is a relative term that takes on specific forms and meanings in different places and times. Despite the efforts of research, data collection, creation, and examination of indicators, along with the pursuit of a consistent and unified theoretical foundation, challenges remain. Common criteria derived from studies on vitality are often scarce.

The term *Livable* originates from the word *Libban*, which means to live, be alive, or to dwell in a specific place (URL1). The term *Livability* in the early 17th century primarily referred to the life and vitality of living beings, and by the early 20th century, it was used to describe the survival rate of newly hatched chicks in the poultry industry. Today, the term *vitality* not only refers to biological survival but also encompasses social and cultural functions and meanings. The earliest concepts related to livable places can be found in the mid-17th-century English literature. Samuel Pepys, a famous English diarist, described a livable place as one where life is accompanied by comfort and pleasantness. The use of the term vitality as a comfortable and suitable place for living is also seen in 19th-century novels, such as *Mansfield Park* by Jane Austen, where vitality is associated with normative and class-based concepts of a good life. The orientation of the concept of liveliness from the perspective of social class is also observed in the works of Peter Evans. He states that the concepts of liveliness in developing countries are particularly linked to basic needs and public goods, and are very different from the understanding of this concept in advanced societies, where the pursuit of liveliness and greater adaptation is driven by wealth (Kaplan, 1989). The distinction of liveliness based on social class highlights the important point that the concepts related to this term can be applied to a wide range of conditions, from basic needs and survival capabilities to luxurious options, freedoms, and opportunities that represent a good life.

Liveliness in terms of its linguistic meaning, as defined in the Dehkhoda Dictionary, refers to vitality, joy, agility, happiness, and cheerfulness. In defining liveliness, it can be said that the

feeling of liveliness is closely related to the feeling of joy and is introduced as one of the inner experiences filled with energy. In other words, liveliness is the feeling of being lively that does not require forced action and is always accompanied by psychological balance. According to Ryan and Frederick (1997), liveliness sometimes arises in a specific situation or after particular events and is more than just arousal, activity, or having energy reserves. This feeling is considered a special psychological experience in which a sense of zest for life and spirit is observable in individuals (Najib, 2011: 530).

Components of Design with a Livability Approach in Architectural Spaces

1. Presence

People feel comfortable and stay in spaces where they have a place to lean and a view of a larger area. No one sits facing a wall; people generally choose a place to sit where they can have a view of a distant scene. (Esmaeili Shirazi, 1378: 282)

2. Diversity and Appeal

Creating a lively, livable, and people-centered atmosphere is possible when diversity and appeal are integrated into all layers of the architecture of buildings and public spaces. One of the main characteristics of diversity is functional diversity. This means that the designed architectural space should serve multiple uses and address the diverse needs of people based on their type of needs and culture. Engaging the edges of spaces with commercial activities, especially catering services, significantly contributes to creating a sense of liveliness. Experience has shown that designing the edges of architectural spaces with retail stores, restaurants, or cafés is one of the best ways to increase the use of public spaces. Food attracts people and the enjoyment people experience acts like a magnet to draw others in. Retail activities not only energize public spaces but also create a sense of surveillance and security. Additionally, designing spaces for events such as street theater, art exhibitions, festivals, and religious ceremonies can help create a lively atmosphere. (Pakzad, 1400: 116)

3. Comfort and Tranquility

Comfort arises from experiences that are pleasurable and satisfying. These experiences validate individuals as part of the community. Psychological comfort can be considered a prerequisite for comfort. Comfort is a more advanced state of physical and mental well-being. Ensuring both physical and psychological comfort for users and occupants of the space is of great importance. (Zandieh et al., 1391: 329)

4. Permeability

Liveliness in an environment can only be realized when spaces are easily accessible, and people can choose different paths to navigate through the space. Permeability is a quality that provides the possibility to move through different points of the space. The number of potential pathways for moving from one point to another determines this quality, and these pathways should be clear and visible. Otherwise, only people familiar with the space will benefit from it. In this context, visual permeability becomes significant.

5. Flexibility

Flexibility refers to the ability to adapt and change objects and spaces. In architecture and environmental design, and particularly in the design of public spaces, the term "flexibility" refers to spatial flexibility and the organization of human-made space, allowing for changes to meet new conditions, needs, and applications. Some spaces can serve multiple activities from the outset without the need for significant rearrangement. Other spaces can be modified to respond to various needs. Designers use the term "adaptability" for these two cases. An adaptable spatial arrangement is a design that meets behavioral patterns at different times

without requiring structural changes. Such a space is called a multifunctional stabilized space. There are valid reasons for designing multifunctional buildings. A space can accommodate different functions either at the same time or at different times. (Najafi, 1397: 49-60)

Environmental Satisfaction of Elderly People in Nursing Home Spaces

In their younger years, individuals who choose their place of residence tend to fulfill the most qualities of the environment by consciously selecting an optimal environment. However, for elderly individuals who may not have a choice in selecting their place of residence, paying attention to and valuing these environmental qualities provides potential opportunities for maximizing functionality and creating flexibility within the environment. Although these environmental qualities are important for all of us, regardless of where we live, for some reason, certain aspects are more significant than others. The discussed environmental qualities include: sensory stimulation, accessibility, perceptibility, meaning, adaptability, individuality, privacy, socialization, aesthetics, and comfort. Many of these qualities are closely related, and each product, tool, or space in the environment requires attention to more than one quality. The environment should be designed in a way that supports the independence of the elderly and their control over the surrounding environment to ensure psychological comfort. (Orians, 1995: 24)

1. **Sensory Stimulation**

There is often disagreement about the level of sensory stimulation that should be provided for the elderly in the environment. While sensory information processing in the elderly may decline, it is often processed more slowly (P. Xue, 2016). One of the complexities in designing environments for the elderly is the need to make case-by-case decisions for certain elements or equipment in both indoor and outdoor spaces. Sensory impairments, regardless of the type or location of residence, occur at varying degrees in the elderly and reduce their ability to perceive and create necessary mental patterns based on environmental data. This difficulty has negative consequences for all other environmental qualities from the perspective of the elderly's limitations. When the environment is appropriately designed and adjusted, elderly individuals can maximize their sensory capabilities to gain a better understanding of their surroundings (Ghahramanpoor Nogechari et al., 1395: 72).

2. **Accessibility and Legibility**

Psychologists and designers traditionally focused on accessibility in terms of wheelchair users and architectural barriers. In broader contexts of the designed environment for the elderly, accessibility and ease of movement should not only consider limitations in movement but also the elderly's ability and constant willingness to walk from one place to another. Additionally, it should include not only the ability to move and navigate without barriers but also the freedom to carry out daily tasks (Altimier, 2004). One can evaluate accessibility based on the connections that a space has with its surroundings, both visually and physically. In terms of accessibility for the elderly, ease of movement from one point to another is of primary importance. It is also crucial to provide the opportunity for elderly individuals to walk in public spaces while paying attention to natural views and the distance between resting spots (Rafian et al., 1388: 30).

3. **Perceptibility**

Perceptibility is defined as the extent to which environmental information is accumulated and reflected in an individual, and it depends on the individual's ability to receive and process that information. As sensory capabilities decline in the elderly, this information may be ambiguous or misunderstood. Improving perceptibility reduces general ambiguities, enhances prediction

of conditions, and improves physical orientation in the environment (Hassanali Khairabadi et al., 1396: 74). By enhancing perceptibility, the necessary grounds for giving meaning to the environment and understanding the meanings of its components are provided. Particularly for elderly individuals who suffer from hearing and vision impairments, it is essential to enhance their abilities to predict the environment and the meanings of its components.

4. **Meaning**

Although the meaning of a space or environment is often conceptual and difficult to measure, it has a definite impact on an individual's perception of a building or space (Kahn, 2002). Designers should be aware that meaning for older adults can be influenced by intangible design elements of places, evoked by the elderly's memories from the past. A strong attachment to a place of residence is often based on the number of years spent living there (Pourafkari et al., 1382: 75). The meanings of spaces and objects help individuals process their sense of existence in the environment and maintain it. These meanings go beyond mere comfort, intertwining with the elderly's memories and past experiences. They play a significant role in the elderly's adaptability to the environment (Rafizadeh, 1380).

5. **Adaptability**

In its ideal form, environments for the elderly should have the ability to reorganize when needed or desired. In this way, if an elderly person's health condition changes, some modifications can enhance the environmental capabilities to sustain the individual's life. Environments that have qualities that facilitate adaptation for the elderly positively influence their abilities to assert individuality, understand the environment, and engage in more social processes (Feizabadi, 1391: 86).

6. **Individuality**

This environmental characteristic allows individuals to exercise ownership over a space, strengthening their sense of safety. In designing for the elderly, it is important to consider their personal preferences. Flexible social spaces and private spaces should complement each other, allowing for both group and individual activities. Creating facilities and offering opportunities to establish individuality in specific spaces, both inside and outside the residence, also helps enhance the elderly's sense of safety and peace of mind. Elderly individuals who experience a strong sense of individuality in a space feel safer and more at ease. These individuals also show fewer aggressive and anxious behaviors and are more likely to form social connections with peers (Mavrat, 1399: 86).

7. **Privacy**

Privacy is defined as an individual's ability and right to choose the manner and conditions under which they exchange information with their environment. It also refers to the ability to control unwanted sensory stimuli, primarily visual and auditory. Researchers agree that sufficient privacy stabilizes self-attention and provides opportunities for solitude, introspection, and emotional overflow. Privacy plays a crucial role in fostering a sense of autonomy. Autonomy, which encompasses individuality and the awareness of choice, allows individuals to control their environment and engage in privacy as they wish. Privacy enables individuals to participate in group activities at their discretion (Kamali et al., 2012: 74).

8. **Connection with Nature (Biophilic Architecture)**

Enjoying nature and observing natural environments is highly significant in promoting the vitality of elderly individuals. Reducing noise and environmental pollution, creating natural views, offering opportunities to rest and gaze upon these views, as well as providing access to

sunlight, and fresh air, observing the sky, gardening, and feeding birds in public spaces can deepen this relationship with nature. However, attention must be given to the fact that elderly individuals are sensitive to extreme temperature changes and excessive sunlight exposure.

9. **Aesthetics**

The term "aesthetics" may evoke a purely visual approach to design, but its foundational definition is based on the emotional response it elicits. This term is often used in judgments regarding the quality of design, whether good or bad. An additional approach to aesthetics includes the individual's perception of quality. Since no universally accepted list of aesthetic principles exists to satisfactorily evaluate the quality of designed environments, predicting what is important for the elderly can be challenging (Orians, 1995). The definition of quality in a space differs between the user and the designer. When discussing quality, a designer might think about spatial execution in terms of order and balance, whereas the user might be more concerned with the maintenance and cleanliness of the space.

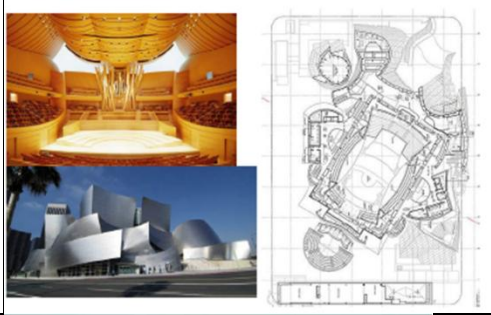
10. **Comfort**

The most prominent environmental characteristic for an individual is the level of comfort. In a designed environment, comfort is a conceptual quality that facilitates physical ease when performing tasks or being in a specific space. Many aspects of comfort are based on the suitability of the environment and its equipment to meet sensory and physical needs. It is often suggested that, when designing for the elderly, it is better to think in terms of average comfort rather than individual comfort levels. The design of an environment should account for a broad range of considerations, from small women to large men, those with skeletal issues, or those using wheelchairs. The application of these considerations depends on the type of product, equipment, or space in question. The level of comfort that elderly individuals reach is referred to as the comfort zone (Aragonés, 2002).
This comfort zone should be a determining factor in the placement of equipment and the shaping of the environment in both internal and external spaces. As one of the most important environmental qualities, comfort results from the impact of several key environmental characteristics. Since comfort is a multidimensional characteristic, creating it within the environment cannot be achieved solely through physical measures. Managing the components available to the designer becomes even more critical. The designer should ensure that the most important areas for creating comfort are addressed in every possible dimension.

11. **Lighting**

In general, it is important to note that, although elderly individuals may need to avoid direct light, they can benefit greatly from sunlight. Therefore, as a recommendation and building regulation, care should be taken to avoid designing residential complexes with close, north-facing open spaces. Each open residential area should be exposed to direct sunlight for part of the day.

Table 1: Case Studies of Music House Design

1	Porto Music House		The central structure of the building is composed of four massive concrete walls that extend from the foundation to the ceiling, with the exterior and interior slanted walls of the building connected to them. Two 1-meter thick walls in the conference hall act as diaphragms within the structure.
2	BBC Music City		In this building, the windows are located on the sides of the rings, connecting to the public space of the city and enabling a direct visual connection between activities and the general public. The acoustics room is designed in such a way that with the open glass windows, it functions acoustically on one side, thanks to the diffuser and transparent elements.
3	Walt Disney Concert Hall		This work represents a long design process achieved through multiple sketches, computer models, and large-scale models. The interplay of natural and artificial light, along with the structure of the auditorium made from curved glass panels, demonstrates a musical movement.
4	Sydney Opera House		The building and its surroundings form an iconic shape of Australia. In addition to being a base for tourist tours and ballet and music producers, it houses the Sydney Opera House, the Sydney Theatre Company, and the Sydney Symphony Orchestra.

5	Vahdat Hall, Tehran		The main hall of Vahdat Hall consists of the ground floor and three balconies, with a total capacity of 700 spectators. The flexible lighting and sound system, along with sufficient stage equipment and multiple rise-and-fall curtains, provide extraordinary creative possibilities for the artists.

Research Method

Considering the objective of the project, the research method will be applied research. Data collection will be conducted through library research. The tools for data collection will include note-taking from books, articles, and reputable websites. The method of data analysis will be qualitative research.

Introduction to the Project Context

Karaj County is one of the counties in Tehran Province, located to the west of Tehran and within the metropolitan area of Tehran. The county covers an area of 227.5 square kilometers, making it the second-largest county in Tehran Province in terms of area. Karaj County lies between the longitudinal coordinates of 59°11′ to 59°21′ and the latitudinal coordinates of 11°12′ to 16°15′. The site for the design is located in Karaj, in the Jahanshahr area, at the southeast corner of the intersection of Molana Boulevard and Jomhouri Boulevard. The location of the site is marked in red on the maps below (Figure 1).

Figure 1: Site Location, Source: (Google Map)

The traffic passing through the western and northern fronts has low and suitable traffic. Additionally, access to the site has been assessed as favorable. The vehicular and pedestrian access routes include a first-grade, 35-meter path on the northern front, a second-grade, 25-meter path on the southern side, and a third-grade, 20-meter path on the western front. The rectangular-shaped site measures 116 by 56 meters. Its area is 6,500 square meters.
The proposed plan, along with the layout and 3D renderings, has been provided.

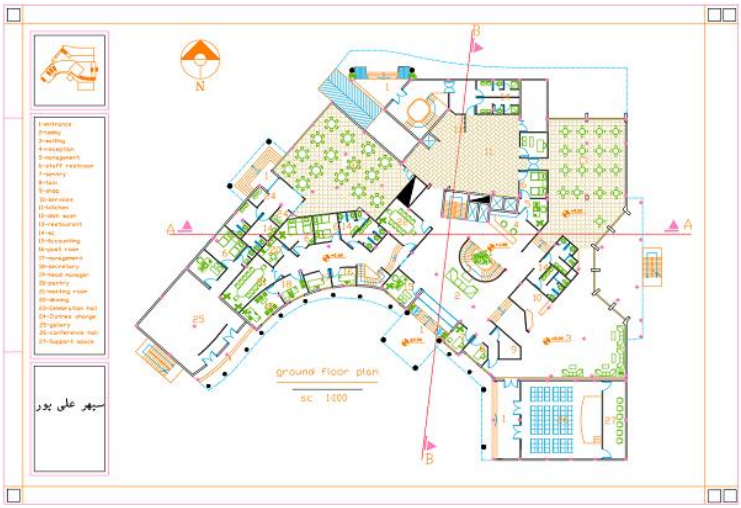


Figure 2: Ground Floor Plan

Figure 2: Volume

Conclusion

Music is a physiological, mental, emotional, social, and cultural need in human life, and through these needs, it has found a widespread root in the fabric of human existence. Music has a biological and physiological connection with the human brain. Rhythm, a biological stimulus, and melody, a source of pleasure, joy, and imagination, cause the slightest rhythmic

action and harmonious sound to awaken and stimulate both the soul and the body. From the beginning of infancy, without any formal education, there is an innate attention to rhythm and melody, and the brain insists on harmony, order, and organization, with music being a reflection of this harmony. Music is a cognitive need. By engaging with music, a world of beauty, the mysteries of sounds, harmonies, unity of parts, and the satisfaction of imagination is revealed, and the mind enjoys entering new domains, drawing inspiration, and creating new thoughts. The thoughts and ideas inherent in the knowledge of music have been partially discovered through human curiosity, leading to the development of the extensive knowledge of music today. This knowledge has now established a special place among the humanities and mathematical sciences as a practical and scientific discipline.

Even the mechanical-functional definition offered for architecture has connections and symmetries with music. By carefully examining sections of history from known societies, we realize that in its refined forms, architecture can possess sensitivities in coloring and in harmonizing its constituent elements, elevating it beyond material and practical needs, providing a space in its intellectual and spiritual realm. Therefore, it is not different from what was formulated in the early twentieth century. It seems that the only commonality between music and architecture is their inclusion in the arts, and indeed this is the case. However, this inclusion signifies many shared points, and it is a testament that all theoretical and foundational artistic discussions are valid for both, representing the common ground of all artistic fields—from painting to industrial design, from music to architecture, from sculpture to cinema—all are arts, all are a collective, and none is superior to the other. For they all progress toward perfection, and their goal and ideal are the same: transcendence and elevation. The form of any architectural or musical product achieves success in evoking thoughts and emotions when attention is paid to its subject in the process of transferring meaning from creator to recipient. The form of an architectural product reaches the inner world of an individual through the eyes, and the form of a musical product through the ears. These two are gateways that allow the external world to enter the inner world, and in the process of this transfer of meaning—or sublime message—two kinds of tools are used, which, in an abstract vision, can be distinguished from each other.

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