



## Music Transformation in Architectural Morphology Case Study: Villa Isola Bandung

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ABSTRACT	ARTICLE INFO
<p>Music and architecture are part of the arts, which are artistic and natural human expressions. A work of art cannot be separated from several internal or external influences. Influences that come from outside or external factors include humans, space and time. Music and architecture influence both, and the connections and aspects between the two are things that certainly have a relationship. Music and architecture have similarities in that both have rules that work in harmony—sensitivity to aesthetic principles: harmony, rhythm, balance, and emphasis. The psychological impression of colour, materials and construction also complements the realization of a complete and integral design. Music can be visualized in other forms of art, namely architecture, a field of art with a wide range of scientific fields. This article will examine the relationship between the art of music and other arts, namely architecture, including its interrelated elements and a description and analysis of the transformation of music into architectural form in Villa Isola Bandung. The discussion of this problem will use a descriptive method with a deductive approach, namely taking a case study and analyzing it in general, specifically related to theories related to music and architecture.</p> <p>© 2021 Kantor Jurnal dan Publikasi UPI</p>	<p><b>Article History:</b> <i>Submitted/Received 27 Sept 2021</i> <i>First Revised 27 Oct 2021</i> <i>Accepted 30 Oct 2021</i> <i>First Available online 5 Nov 2021</i> <i>Publication Date 11 Nov 2021</i></p> <hr/> <p><b>Keyword:</b> <i>Transformation,</i> <i>music,</i> <i>fine arts,</i> <i>morphology,</i> <i>architecture.</i></p>

## 1. INTRODUCTION

Art has emerged since prehistoric times and has been heavily involved in all aspects of human life. Art is the result or process of human work and ideas, which involves skilled (Simon, 2001; Taylor & Ladkin, 2009), creative abilities (Silva Pacheco, 2020), sensory sensitivity (Burton, et al., 2000; Lusebrink, 2004), heart sensitivity and thought to produce a work that has a beautiful (Majidovich, 2021; Tursunbaevna, 2021), harmonious impression (Bilova, et al., 2020) and artistic value (Wagner, et al., 2021). According to Peters & Olabode (2018), art can be divided into three main classes: fine, applied, and performing. The branches of art are divided into three main classes related to each other, including architecture and music (Azadi, 2015).

Music can be categorized into performing arts. Music is a special, unique thing created by humans that has a powerful capacity to convey and regulate emotions (Juslin & Västfjäll, 2008; Johansson, 2006). The world is musical because almost every vital event has music (Scott, 2013). *Music* is a language that contains universal elements, crossing boundaries of age, gender, race, religion and nationality (Campbell, 2003; Shelemay, 2011). Music can influence human emotions or feelings, both physically and psychologically (Vink, 2001; Perlovsky, 2010). Music has several essential elements: pitch, rhythm, dynamics, audio quality, timbre, and texture (Muller, et al., 2011; Panda, et al., 2020). Music can also be a series of harmonious elements combined to form a melody as a song. In the process of its formation, music can be interpreted as equivalent to architecture, how the elements of points, lines, and planes can form a specific space so that it forms a place, as described in the theory of Finding Lost Space by Roger Trancik (Adibi & Goodarzi, 2017; Purwantiasning & Djuha, 2016).

Meanwhile, architecture can also be categorized as art; in some books, it is categorized as applied art (Peters & Olabode, 2018). Architecture, like music, also influences emotions (Livingstone & Brown, 2005; Capes, 1867). In the book "Architecturally Speaking" by Eugee Raskin (James, 1957), emphasizes that architecture consists of three kinds of emotions, namely: desired emotions (intended emotions), inherent emotions and emotions that arise or occur (evoked emotions) (Purwantiasning & Djuha, 2016).

The convergence of music and architecture is a fascinating domain within the broader sphere of artistic expression, where the natural relationship between these two fields reveals the complexities of human creation. Music and architecture are both fundamental aspects of the arts as significant representations of the human experience and pathways via which individuals negotiate the intricacies of their environment (Wunderlich, 2013). Whether expressed through musical compositions or architectural designs, a work of art is a complex creation influenced by internal and external factors. External variables originating from the domains of humanity, space, and time contribute to forming a story that influences artistic creativity. Music and architecture have a deep relationship, influencing and reflecting one others resonances (Raja, 2018; Cook, et al., 2008). Music and architecture intersect in their fields of study and share core concepts that guide their production (Ferraro & Gurses, 2009). Strictly observing principles such as harmony, rhythm, balance, and emphasis produces a shared vocabulary, resulting in a seamless integration of sound and sight. Furthermore, the psychological influence of colour, materials, and construction reflects the subtle emotional reactions elicited by musical compositions, promoting a comprehensive and essential approach to design.

As we examine this mutually beneficial relationship, our attention becomes more focused on the profound and influential journey represented by Villa Isola in Bandung. This architectural marvel serves as a platform for transforming music into a tangible structure, providing a compelling example for analyzing the interrelated aspects that connect the worlds of music and architecture. This paper utilizes a descriptive and logical approach to explore hypotheses concerning the relationship between music and architecture. It aims to uncover the complex connections that unite these artistic expressions into a cohesive narrative.

## 2. METHODS

The research used qualitative methods with a descriptive analysis approach. Primary data was collected empirically through a literature review to obtain materials regarding elements and constituents in architecture and music. Observations were conducted by adjusting conditions and utilizing existing facilities and media to obtain information regarding the Villa Isola Bandung. Through the research title, the sample used in this research is the floor plan and appearance of the Villa Isola by determining the independent and dependent variables. The independent variables used are the song composition components in music in the form of intro, verse, bridge, chorus and fade. Meanwhile, the dependent variable is using the rooms of the Villa Isola Bandung.

## 3. RESULTS

### 3.1. Villa Isola Bandung

Villa Isola, or what is currently called Bumi Siliwangi, is the building that is the object of research in this article. This research is located within the Indonesian University of Education, precisely on Jl. Dr. Setiabudi Km. 8, Isola Village, District. Sukasari, Bandung City, West Java 40154.

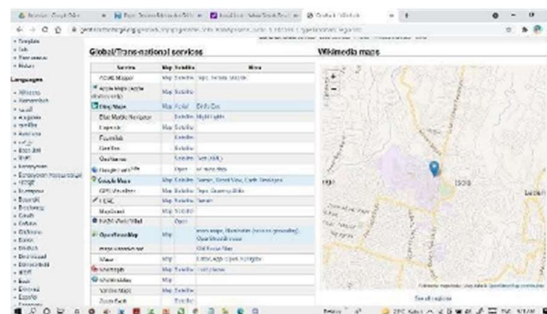


Figure 1. Villa Isola Location  
(Source: <https://geohack.toolforge.org>)

When this building was first built, it functioned as a house that could be categorized as a luxury or villa. Dominique William Beretty, a Dutch businessman with Italian blood, built Villa Isola to become his new villa (Helmy, 1997). This building has a living room, dining room, spacious billiards room, study room, bedroom, family room with balcony, open terrace on both west-east sides, and a comfortable bar equipped with a film projector. However, Beretty only occupied the building for a few months until the building's function was changed to a hotel after his death (Rahadian, et al., 2014).



**Figure 2.** Villa Isola before Indonesia's independence  
(Source: <https://tempatwisatadibandung.info>)

After Indonesian independence, the Isola villa was renovated by adding another floor above the roof, and the name changed to Bumi Siliwangi (Suprpto, 2019).



**Figure 3.** Villa Isola now  
(Source: <https://www.jejakpiknik.com>)

The building still functions as the rectorate building for the Universitas Pendidikan Indonesia. Villa Isola was designed by CP Wolff Schoemaker in 1933. This building has an interesting architecture and layout; this can be an example of a harmonious combination of Western and Eastern building art (Suryono, et al., 2013). This design is influenced by original Javanese philosophy but can also show the spirit of modernism with a touch of Art Deco combined with local ornaments (Puspita, 2018). The building's orientation follows the north-south axis, combined with a contoured environment located on a ridge. So, a position or location is created that makes it possible to see the view because the building faces Mount Tangkuban Perahu in the north and Bandung in the south (Suryono, et al., 2013).

### 3.1. Transformation of Musical Elements in Architecture

Music is used as an approach and source of inspiration for architectural design (Imaah, 2004; Yoo & Choi, 2021). The relationship between the two can be explained by music, which is a form or approach to architecture that results in songs, while in architecture, the results take the form of buildings (Mohamed, 2018; Tokhmechian & Gharehbaglou, 2018). The results of architecture and music, in the form of buildings and songs, have elements each has in common and can be read as interpretations of each other's elements (Tzanetakis & Cook, 2000). It can also be strengthened by the statement from Quincy Jones, where architecture and music can be interpreted as similar things with different forms: "If architecture is a frozen music, then music must be a liquid architecture" (Purwantiasning & Djuha, 2016). Musical and

architectural elements that can be interpreted with each other can be separated first into essential elements and supporting elements (Moody, 2009). We can equate the basic elements of music, namely melody, harmony, tempo, and rhythm, with architectural elements of form, function, pattern, and proportion (Rasulzade & Divandari, 2019; Morris, 1995; Sendhil & SA, 2020).

**Table 1.** Interpretation of Basic Music Elements in Architectural Elements

<b>Music</b>	<b>Architecture</b>
Melody	Shape
Harmony	Function
Tempo	Pattern
Rhythm	Proportion

Meanwhile, the supporting elements in music can be taken from the plot of a song, and architecture can be taken from the plot of a building. This element consists of intro (in architecture as entry), verse (in architecture as second space), bridge (in architecture as transit space), chorus (in architecture as major space), and fade (in architecture as exit).

**Table 2.** Interpretation of Music Supporting Elements in Architectural Elements

<b>Music</b>	<b>Architecture</b>
Intro	Entry
Verse	Second Space
Bridge	Transit Space
Chorus	Major Space
Fade	Exit

To transform elements in music into elements in architecture, various musical elements that have previously been discussed will be applied to discuss the architectural elements of the Isola villa building, Bandung. This transformation is based on the morphology or shape of the building with the initial function that this building was created because after the government purchased this building for the needs of the *Perguruan Tinggi Pendidikan Guru (PTPG)* Bandung, which was named Bumi Siliwangi (Rohman, 2016), the building was damaged. There were lots of bushes due to the war. From that event, the luxury and splendour of Villa Isola ended. The Art Deco elements in the building have also decreased, which is different from now after it became Bumi Siliwangi with the Universitas Pendidikan Indonesia environment (Paramita & Zahro, 2019).

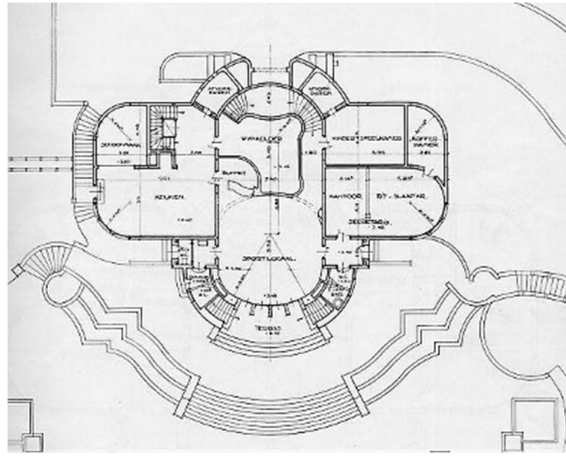


Figure 4. Villa Isola floor plan

- The Intro in a song is the part where a song begins, or the entrance of a song, and the entry is the entrance to a building or entrance. In the Villa Isola building, the main entrance, an interpretation of the Intro, is located in the middle of the north facade, shaded by a concrete canopy arch supported by only one pillar.
- The verse in a song is the verse after the first verse, whose pattern is constantly repeated. The verse has the same musical pattern, with the content of the verses being different. Verse in a building can be interpreted as a second space, which is a space whose function or arrangement resembles the main room. However, this second space is an alternative space that does not always have to be in an architectural building.
- The bridge functions as a bridge to connect the verse-chorus, verse-solo instrumental, or chorus-instrumental in a song. Bridges in songs are usually without verses. Bridges in architectural buildings can be interpreted as transit spaces or transition bridges for buildings. The bridge section in the Villa Isola building can be depicted with the lobby section on the plan. The lobby in this building connects the outside with the inside and the entrance with the family room.
- The chorus is the tone that is the core of the whole song. This part in a song is the part that determines the image of a composition. The chorus is interpreted as a significant space in architectural elements. The major space in the building itself is the core room of the building or the room for which an architectural building is built. The family room, connected by the lobby, can be the main space on the first floor of Villa Isola. The Villa Isola building is a residential building where there is usually a family room in residential buildings.
- Fade ends the song, usually placed at the end of the song, where the song slowly fades away. If the fade in the song is translated into an architectural element, it is part of the exit. This exit, in the Villa Isola building, is located at the back of the building and is in line with the entrance.

If we cut into the Villa Isola building, we can see it has four floors with gardens around it. If it is a musical supporting element, the garden part can be called the Intro because it is the part where the building begins. There are two gardens at different levels that surround this villa area. The garden to the north, which tends to be higher, is a European-style garden with a rectangular pond and a statue in the middle. A road was created to divide the garden symmetrically to allow cars to pass to and from the garage.



Meanwhile, the second garden in the south is large and occupies most of the villa area, with circular ornaments filling it. There are also similar stairs on the west and east sides of the building. This park is divided into a circular area while the building is positioned in the center of the circle, giving the impression that the building is an integral part or center of the park. Furthermore, the 1st floor of this building can be interpreted as a bridge with musical elements. It is because the lobby, which is most of the interior on the first floor of this building, is connected by a spiral staircase to the second floor and the family room. On the first floor, there is also a large window in the shape of a semi-circular curve; this decorates the family room and is equipped with an open balcony with a parapet made of iron bars, offering a panoramic view of the city. The family room in this building is also equipped with a circular toilet.

#### 4. DISCUSSION

Morphology, when viewed literally, means 'knowledge of form' or 'morphos' (Anderson, 1982). In contrast, the definition of morphology in architecture prioritizes discussions related to geometric shapes so that they are related to the room's purpose in determining the value of a space (Srinurak & Mishima, 2017). The Experts have several definitions of morphology, including: (1) Morphology is the science of language about the intricacies of word structure (Hay & Baayen, 2005); (2) According to J. W. M. Verhaar, his definition is that morphology is a branch of linguistics that identifies the basic units of language as grammatical units of writing (Tambusai, et al., 2016); Morphology is a part of linguistics that specifically discusses word structure and the influence of changes in word structure on word meaning (Tambunsaribu, 2019); Through her explanation, Nida (in Maniara, 2014) can be said that morphology is the study of morphemes and the arrangement of morphemes in word formation; According to Crystal (in Kusumawardhani, 2015), morphology is a branch of grammar that discusses the structure and form of words, especially the structure and form of words through morphemes; Bauer (2003) defines morphology in short sentences, namely the internal structure of word forms; According to O'Grady & Dobrovolsky (in Brinton, 1954), in their understanding, it can be taken to mean that morphology is a component of transformational-generative language (TGT), which specifically discusses the internal structure of incredibly complex words.

Moreover, according to Kridalaksana (in Restiani & Sofyan, 2019), morphology is a field of linguistics that studies morphemes and all their combinations in language structure. Architecture has several elements, namely, points, lines, planes, and space. These elements will unite after being combined until they become a form. If the elements are diverse, the resulting shapes can also vary.

Elements in architecture are parts contained in a building. Elements in architecture include building mass, building plan shape, building appearance, structural system used, building site that has been processed, space organization, circulation and building materials (Santos, et al., 2013). With the following explanation (Stankovic, et al., 2018): (1) The mass of the building is the building itself, where the floor, walls, and roof bind a space; (2) The shape of the building plan is the shape of the plan, which is a cutting of the building one meter high from the ground, thus showing the circulation pattern of the building; (3) The appearance of the building is a visualization of the building when seen from the outside, to be an attraction for visitors before entering the building; (4) The structural system used is the force distribution system used by a building; (5) A processed building site is building land that has been reprocessed to make it more aesthetic and by the building contained therein; (6) Spatial

organization is the arrangement of circulation patterns between spaces, whether these spaces are directly connected or not, and how each space is achieved; (7) Circulation is the movement pattern of building occupants from one room to another; (8) *Building materials* are materials used to construct a building, mainly to increase the attractiveness of the exterior to attract visitors' attention; (9) In other cases, architectural elements are points as the centre of attention and do not have length, width, breadth or depth; (10) The line originates from an extended point with length but no width or height; (11) A plane is a continuation of a line, which is then continued in a different direction from the original direction; a plane has length and width but no height; (12) Space is the result of a combination of several fields; (13) Shape is a characteristic or main identifying characteristic of volume, and conceptually, volume has three dimensions: length, width and height.; (14) Texture, which is a description of the surface properties of an object that can give rise to certain impressions such as rough, smooth, slippery, shiny and opaque; and (15) Colour plays a role in the intensity and value of the shape's surface.

When exploring the connection between music and architecture, it is essential to acknowledge the significant influence that cultural settings have on forming the artistic environment. Both professions function as cultural reflections, mirroring their respective era's values, beliefs, and socioeconomic dynamics. Thus, music and architecture serve as conduits for communal self-expression and cultural identity, embodying the essence of a particular period through the melodic and structural compositions. The relationship between music and architecture goes beyond physical components, extending into the domains of emotion and perception (Capanna, 2009; Mohamed, 2018). The emotional reactions triggered by architectural environments can be compared to the psychological impact of a musical piece (Bigand, et al., 2005, Joye, 2007). The ability of art forms to elicit emotions and create atmospheres highlights their ability to communicate on a profound human level, surpassing linguistic obstacles and promoting global comprehension.

Furthermore, the interdisciplinary conversation between music and architecture is an intriguing investigation into synesthesia, a condition in which one sensory experience elicits another. Within the domain of artistic creativity, this phenomenon is evident in music's capacity to stimulate visual components in architectural design and, conversely, the potential of architectural design to evoke musical aspects. The seamless fusion of two separate art forms is exemplified by the harmonic integration of sensory stimuli inside a place, resulting in a multisensory experience.

The temporal nature of music and architecture adds a dynamic element to their interaction. Architectural designs have lasting significance, constituting essential components of the historical and cultural fabric (Xu, et al., 2020). Musical compositions, whether classical masterpieces or contemporary successes symbolize artistic accomplishment (Simonton, 1991; Kozbelt, 2007). Acknowledging this mutual lasting existence over time, one can see how both creative forms contribute to the uninterrupted flow of human expression, surpassing specific instances and linking different generations.

The similarities between musical composition and architectural design are further demonstrated when examining the underlying collaborative aspect of their fulfilment. Both composers and architects must carefully straddle the fine line between conforming to established principles and pushing the limits of creativity. The conflict between tradition and innovation drives the development of art, fostering a dynamic exchange that influences the direction of both fields. With the continuous advancement of technology, new tools and mediums for artistic expression are emerging, leading to a transformation and adaptation in the relationship between music and architecture. The incorporation of soundscapes into



architectural projects and the investigation of spatial dynamics in musical performances demonstrate the progressive nature of this interdisciplinary interaction. These advancements broaden the possibilities for artistic expression and push the limits of traditional restrictions, creating a fertile ground for inquiry and experimentation.

An analysis of the Villa Isola case study in Bandung, focusing on the impact of music on architectural morphology, reveals a compelling story of how artistic inspiration may surpass conventional limits. Villa Isola, created by acclaimed Dutch architect C.P. Wolff Schoemaker, serves as a testament to the incorporation of musical ideas into its fundamental structure.

The architectural design of Villa Isola incorporates a rhythmic and harmonic sense that mirrors the fluidity and cadence observed in musical forms. The architectural components of the edifice, ranging from its graceful curves to its detailed embellishments, appear to harmoniously interact with the surrounding milieu. The intentional incorporation of rhythmic features gives the architectural structure a dynamic aspect, captivating spectators and evoking a visual conversation reminiscent of musical movements.

The notion of harmony, which is fundamental in music, is clearly evident in the spatial arrangements found within Villa Isola. The meticulous arrangement of volumes, materials, and colors results in a harmonious composition, similar to the precisely crafted chords and melodies in a musical composition. The architectural composition demonstrates a discerning comprehension of the interaction between parts, matching the harmonious balance seen in music. Furthermore, the profound impact of music is demonstrated by Villa Isola's capacity to elicit emotions and communicate a narrative. The architectural form serves as a narrative element, leading residents and visitors on a spatial journey that evokes the same emotional intensity as music. The intentional arrangement of spaces within the villa demonstrates a sophisticated comprehension of architectural storytelling, in which each room adds to the overall narrative, much to movements in a musical symphony.

When considering Villa Isola as a case study, it is important to recognize the cultural significance that is reflected in its architectural form. The design gains additional layers of significance through the architect's understanding of local aesthetics and traditions, in conjunction with the cultural setting of the region. This cultural assimilation acts as a conduit connecting the musical and architectural lexicons, fostering a discourse that resonates with the wider framework of human creativity.

## 5. CONCLUSION

Architecture and music, which are branches of art, are related. Music, which can be categorized as a performing art, and architecture, which in some books is categorized as an applied art, have as many connections as other branches of art. One way to discuss the relationship between music and architecture is its elements. The elements discussed are matched from a musical to an architectural point of view. The musical elements themselves, which are discussed, are divided into essential elements and supporting elements of music. The essential elements of music consist of melody, harmony, tempo, and rhythm, which are interpreted as form, function, pattern, and proportion in architectural elements. Meanwhile, the supporting musical elements consisting of intro, verse, bridge, chorus and fade are interpreted as entry, second space, transit space, major space and exit in architectural elements. The analysis results from the previous Villa Isola case study prove that architectural works can be carried out through a musical approach. In its constituent elements, music is arranged sequentially, just as architectural elements are. It is proven in the case study,

wherein the first-floor plan and in pieces, the arrangement always starts with the entry, which in music is the intro, and ends with the exit, which in music is the fade.

## 6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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