

The interrelated Qualities between Sculpture and Archisculpture Design

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Abstract

There are many overlapping principles, between archisculpture architecture and sculpture. Architects should understand the vital role of the sculptor's contribution to archisculpture architecture team; Nowadays, the idea of designing buildings with a shape became scattered and well-liked because of their aesthetic effects on cities and viewers. Whatever we face many difficulties and challenges between the two disciplines' academics. We have to insist to create a deepening dialogue between architects, sculptors, and researchers, put into real practice, create integrated and organic interrelationships. Cooperation will help to create an objective environment and conditions for the creation instead of depending on the individualization in creating of archisculpture architecture. This article concerns raise awareness, reconsidering of interrelationships of modern sculpture's role within the architectural system in creating Archisculpture design. To make the common relationships academically more integrated according to the contemporary concept of form. The interrelated Qualities between sculpture and Archisculpture phenomenon were analyzed and compared. The result shows; - They both share forms, space, and aesthetics expression. Archisculpture design approaches where the form is dominant and strongly appreciated primarily for its beauty and emotional power on visitors as a sculpture piece. Engineering constraints can limit the architect from art emotion that motivates to create unique forms that are harmonized with spiritual needs. On the contrary, the sculptor completely unhindered by functional limitations and his/her expression is directed to aesthetical form. Consideration of principles -interrelated relation, between sculpture and architecture is necessary for the convergence of the new borders between the two disciplines' academic extension. Sculptor's presence within the architectural system when creating archisculpture is needed to put into real practice.

Keywords:

Form – aesthetics– creativity– Design

1 Introduction

Throughout history, architecture and monumental sculpture are standing as a symbolic and reservoir of memories for the towns and cities with the embedded meaning in their form and expression (Houshangi, 2013) displaying a new aesthetic direction. The intimate relationship between sculpture and architecture has fascinated humankind since ancient times. Each of them has the same monumental mission style. Tenets of this relationship to expressing man's beliefs, ideas, human needs through form, scale, and material. The good examples that reveal how sculpture imbued with the architecture in distinct and complementary relationships, as in Ancient Egyptian architecture, Ancient Greek, Roman, Gothic, Renaissance Baroque, to the period of return to Classicism (Neoclassicism) and Art Nouveau.

Despite this close and distinctive relationship between sculpture and architecture throughout human civilizations. Nevertheless, it is clear to distinguish the sculptural elements, such as Statues, motifs, ornamented columns, and other architectural details that, embedded with architecture. The sculptural elements are always designed to harmonize with an architectural setting or planned according to elements of architectural order (Burnham, 1975).

From the end of the 20th century, the characteristics and reworking of the modern sculpture concept are developed in a more profound way. The ideas and concepts of forms, dramatically changed, and become unorthodox, creating a vital synthesis of mass, volume, and space, break down the traditional psychic barrier and the values of the past. Types, ideas, concepts, and use, influenced by the amazing growth of techniques, following the urban and industrial revolution that emerged during the 19th century. In addition, the desire of artists to combine various tendencies of a given work became a shared feature all over the world (Kozłowski, 2013).

An example of revolutionary developments in the visual arts of form and materials throughout the beginning decades of the 20th century. By the Romanian artist Constantin Brâncuși, who took a daring step concerned with the formal simplicity of essential importance for the early history of modern Archisculpture (Beyeler, 2005). He has a "genius of omission" (Figure 2, Figure 1) strived for essence, establishing a new continuity between the molded space within and without the free space. Raymond Duchamp-Villon played a central role in the development of modern organic form (Figure 3), inspiring arch sculpture design. Futurist Umberto Boccioni, who is used "force-lines" to create an "arabesque" of directional curves such as his running figure entitled "Unique Forms of Continuity in Space". Boccioni declared in the Technical Manifesto (1912) bombards of Futurist Sculpture, "Let us proclaim that the environment must form part of the plastic block as a special world regulated by its own laws" (Figure 4) (Burnham, 1975). Antoine Pevsner (Figure 5) and Naum Gabo, are considered as the pioneer of the integration of engineering techniques and scientific principles into art (Figure 6). The two brothers were concerned with space and rhythm, they were issued in 1920 the "Realistic Manifesto" of Constructivism, forms and dynamic rhythms must assume dominance over mass to emphasize space-time relationships. (Encyclopedia.com, 2020), (Burnham, 1975) The modernist movement of Expressionism sculpture in the early 20th century had a significant influence on architecture. (Kozłowski, 2013) The movement, increasingly forged close links with art and the created archisculpture phenomenon, as one of the special styles of the art model and architecture. The sculptor Barbara Hepworth (1903–1975) is concerned with the simplicity of the form and abstraction (Figure 7). For her, a sculpture is a mediating form, connects humans and our inner and outer worlds. Broken Obelisk (Figure 8) sculpture by Barnett Newman in (1967), shows an elegant composition of equally smart modernist architecture. Henry Moore sculpture (1898 –1986) and how he is forming his semi-abstract monumental sculptures and his attempt to achieve a relationship between the figure and the landscape (Figure 9). The space in Henry Moore sculptures reflects clearly the "study of function of spaces is considered an important part of sculpture innovation and development" (Guo, 2013) (Figure 10).

Arguably, the change in the concept of sculpture and architecture from the end of the 19th century, architects get inspiration from the artist's work and /or artists are inspired by the architect's work. An example of the early concept of changing in affinities of intentions and procedures of architecture to the modern sculpture in Barcelona by Antonio Gaudí (1852–1926), who is culminated by his sculptural Architecture, which is organic and dynamic in their

forms (Figure 11). Hermann Finsterlin, the expressive architect played an influential role in the movement of German expressionist architecture. Hermann building's assumed the form of sculptural models only (Figure 12). Rudolf Steiner and his Goetheanum building (Figure 13) is considered as masterpieces of early modern Archisculpture (Cusack, 2012), in 1920, an excellent example of how architects start to modeling their buildings. He defined the proximity between anthropomorphous architecture and figurative sculpture to the present day (ArchiSculpture - arcspace, 2012). Rudolf Steiner applied formative principles to express the union of spirit and matter in the functions of stage and auditorium (Adams, 1992). The Germany Einstein Tower (Einsteinturm) (**Error! Reference source not found.**14) was designed by the architect Erich Mendelsohn, the Tower looks like independent sculptures instead of an architectural model (Kozłowski, 2013). His architecture building reflecting the remote relationship between figurative sculpture and anthropomorphic architecture (Brüderlin, 2005). The 'lightning strike' monument (Figure 15) which was constructed in 1920 - 1922, according to submitted plans after a competition by the architectural office of Walter Gropius. The design was at once gravestone and monument, shows a dynamic of a crystalline sculpture made of concrete, framed space intended to be "open to everyone" and not a fenced-off area (Krohn, 2019) as a 'symbol of the living spirit'. The symbolic monument reveals the emergence of the complementary relationship between sculpture and architecture. Gropius wrote in 1919 in his program of the Bauhaus. "Let us strive for, conceive, and create the new building of the future that will unite every discipline, architecture and sculpture and painting (Krohn, 2019). He was aware of the importance of combining sculpture with architecture (Brenner, 1971). The gatehouse "Da Monsta" of the American architect Philip Johnson, which look like built versions of modern sculpture, "As an architect, he made his mark arguing the importance of the aesthetic side of architecture and claimed he had no interest in buildings except as works of art" (Figure 16) (*Inkct*, 2015).

The growing sense of sculptural architecture strongly appeared at the beginning of the Seventies of the 20th century, creating the phenomenon of "Archisculpture" perhaps - architecture as sculpture or vice versa (Corkill, 2008). This phenomenon is an innovative language of contemporary architecture, which become more and more in the present century (Markovic, 2017). The architect Isozaki Arata noticed that all over the world, the term "iconic architecture" became common parlance. All developers these days want an "icon" architecture, and they do not care what the function of a building is! (Corkill, 2008). We can assume the "iconic architecture" is Architecture, which has an attractive sculptural form. No doubt the development of new materials, revolutionary innovations in construction, and Computer-Aided Design programs as a conceptual modeling process for architectural design, have released the architect from traditional discipline and conceptual limitations (Rachline, 2016) to explore the freeform architecture in similar strategies of making modern sculpture (Javier Maderuelo, 1989), (Kurmann, 1995). Archisculpture is an ideal frame for showing the building as a piece of art to the public. Understanding the principles - interrelated of physical space and considering the tenets of form, scale, space, and material that they share will lead to the convergence of new borders between the two disciplines. As well, will make the common relationships academically more integrated to revealing the spiritual level for human needs. In addition, will broadening the growing sense of connection between sculpture and architecture



FIGURE 2. BIRD OF SPACE. 1928 - BRONZE



FIGURE 1. THE ENDLESS COLUMN SCULPTURE (29,33 M) MADE OF ZINC, BRASS-



FIGURE 3. RAYMOND DUCHAMP-VILLON, PORTRAIT OF PROFESSOR GOSSET 1917- BRONZE



FIGURE 4. UMBERTO BOCCIONI. SCULPTURAL ENVIRONMENT, DEVELOPMENT OF A BOTTLE IN SPACE (1912) BRONZE



FIGURE 5. . ANTOINE PEVSNER, CONSTRUCTION, 1938, KOPER



FIGURE 6. CONSTRUCTION (STANDING WAVE) 1919–20, CONSISTING OF A PLAIN STEEL ROD AFFIXED TO A WOODEN BASE, MOTIONING BY AN ELECTRIC MOTO - REPLICA 1985

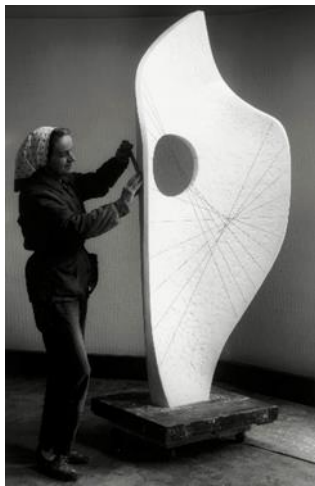


FIGURE 7. HEPWORTH WORKING ON GYPSUM CURVED FORM, "BRYHER II" (1961). PHOTO COURTESY: BOWNESS, HEPWORTH ESTATE



FIGURE 8. BARNETT NEWMAN - BRONZE "BROKEN OBELISK" IN THE UNIVERSITY OF WASHINGTON'S RED SQUARE

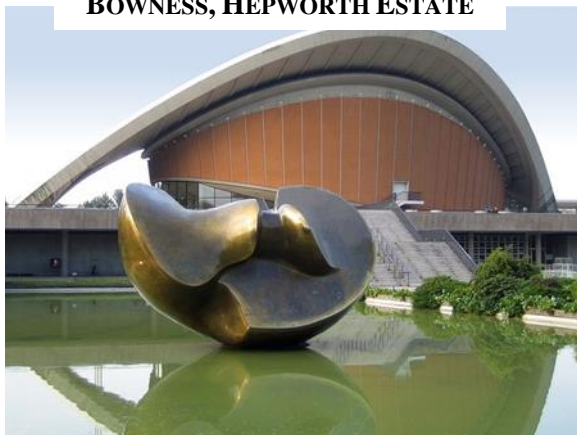


FIGURE 9. LARGE DIVIDED BRONZE OVAL: BUTTERFLY (1985-86) -



FIGURE 10. DOUBLE BRONZE OVAL (1966), JARDINE HOUSE, CENTRAL, HONG KONG
[HTTPS://2U.PW/QSBR6](https://2u.pw/qsbr6)



FIGURE 11. ONE OF THE ANTONI GAUDÍ, MASTERPIECES IN THE CENTER OF BARCELONA

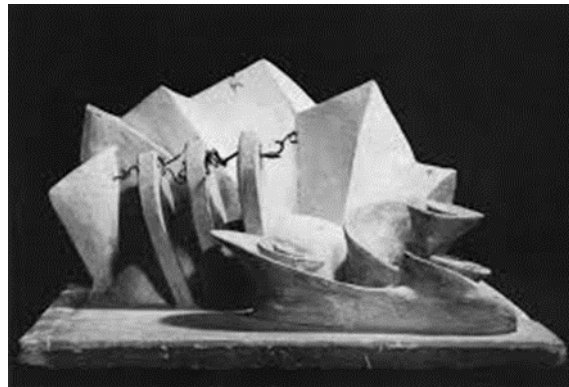


FIGURE 12. HERMANN FINSTERLIN, MAUSOLEUM, 1919 - GYPSUM



FIGURE 13. SECOND GOETHEANUM BUILDING, A TIMBER AND CONCRETE STRUCTURE DESIGNED BY RUDOLF STEINER



FIGURE 14. THE EINSTEINTURM IN POTSDAM, GERMANY EINSTEIN TOWER BY ARCHITECT ERICH MENDELSON



FIGURE 15. MEMORIAL TO THE VICTIMS OF MARCH 1920 - CONCRETE



FIGURE 16. PHILIP JOHNSON, WITH A MODEL OF A PRIVATELY COMMISSIONED SCULPTURE (2002) –(WIKIPEDIA)

1.1 Problem of research

Since the spread of the “Archisculpture” phenomenon till that time, there are debates about, is this architecture as sculpture or vice versa and or architecture inspired by sculpture or the reverse. The main points we discuss herein are the rich volumes of interferences, similarities, and differences, which have taken place between sculpture and architecture in the "Archisculpture" architecture phenomenon. How the integrated collaboration between sculptors and architects will reveal the spiritual and aesthetic level for human needs? How the Exploration of the two fields will devote to the development of sculptural forms in archisculpture architecture?

1.2 Objective

The purpose of this paper is to identify the relationship between the essential qualities of modern sculpture and archisculpture. Understanding if this is a sculpture, or architecture, and if they both are belonging to each other as one conception of aesthetics form. As we are focusing on the principles - interrelated of physical space and form they both share, to make sculptural architecture develop in better collaborations with sculptor and Architect.

1.3 Limitation

The paper limitations mostly are concentrated on designed architecture with an organic or geometrical form, which gives an impression as a piece of large-scale sculpture or a piece of art.

1.4 Methodology

The method used is to reviewing and analyzing the sculpture revolution on concept and form in the 20th century and its inspiration roles on the phenomenon of archisculpture architecture through modern time. Reviewing the term of sculpture form, archisculpture and the relations between form and space in sculpture and archisculpture, to find the interrelationship between the two disciplines, using Archisculpture and sculpture designs achieved through the beginning of the 20th century to the present day.

2 Sculpture and Archisculpture Term

2.1 Sculpture

According to Cambridge and Oxford Dictionary, sculpture is defined, as the art of forming three-dimensional objects that represent a thing, person, idea, and or abstract forms so you can see it from different sides. Sculpture is aesthetic and its function is containing symbolic meaning.

All sculptures before the 20th century were static and free-standing objects, seen from all sides, except under bas-relief sculptures on buildings, and altarpieces which also constituted a notable form. (Irvin, 2015). Herbert Read defined sculpture before the 20th century “as an art of solid form, of mass, and its virtues were related to spatial occupancy from its inception in prehistoric times down through the ages until comparatively recently” (Burnham, 1975).

In modern times of art, the definition becomes much wider than it had been at the beginning of the 20th century or before. Modern sculpture is a visual object consciously created through an expression of an idea or imagination. His purposes are ranging from purely aesthetic to utilitarian aesthetic. In the fluid state of the visual arts, at the turn of the 21st century, the term gets more extensions, and not circumscribed of objects or sets of activities. Using an enormous variety of media light, sound, or their own body to represent an idea sculpturally. As well as some worked directly with nature and environments ranging from tableaux to contexts that envelop the spectator. Sculptors are now no longer identified with materials or techniques and any media may be used to serve their ideas.

2.2 Archisculpture

The term “Archisculpture” perhaps — sculpture as architecture, or vice versa (Corkill, 2008). Is one of the most fascinating phenomena of 20th-century art, it has undergone rapid development since the end of the last century and the beginning of this one (Markovic, 2017). The innovative phenomenon clarify many aspects of the dynamic reciprocal with an extraordinary relationship between architecture and sculpture (Brüderlin, 2005). Use of sculptural form techniques by an architect and/or sculptor in the design of any project following such an idea in the building. The interior and exterior of Archisculpture architecture are subjected to sculpture rules (Rukmane-Poča & Leitāne-Šmīdberga, 2016). In section 6, Pp 136 of the Foundation of Beyeler's exhibition on the relationship between sculpture and architecture in the 20th century Catalogue, Henry Moore mentioned that from 1950-1960, architecture becomes sculpture and sculpture becomes architecture (Markus Brüderlin; Friedrich Teja Bach; Fondation Beyeler.; et al, 2004). The phenomenon of contemporary archisculpture is a result of the long tradition interrelationship between sculpture and architecture. According to the architect, the Archisculpture is more than a building it is a sculpture, reflecting this building. Therefore, the expression of this phenomenon is viewable as a sculpture and as architecture.

3 Form and Space in sculpture and architecture

In terms of art, "form" refers to 3-Dimensional objects, and as a noun may refer to shape, structure, and or appearance. Form in modern sculpture language, is not a shaping of Cylinders, pyramids, or spheres, and is not as before, representative of the figurative composition of human figures derived from various anatomical canons only. The formalist vocabulary in modern sculpture developed into a "new language of vision" and no more simulation of natural surfaces and features, carrying on the evolutionary trends (Burnham, 1975). A Form is a visual appearance as it is frequently a fundamental attribute of a product. A Form is a visual appearance, it should be a fundamental attribute of an object with suitable appealing concepts (Alcaide-marzal, Diego-mas, & Acosta-zazueta, 2020). In spite of the sculptor is beset by a phenomenal world of technology, and software programs, however, aesthetic rules and form still a basis and the utmost importance in his visual perception. One of the modern architecture definitions is “synthesis discipline that succeeds to accomplish a consensus between function, structure, and form within the constructed space, in which human life may develop in an organized manner” (Georgescu, 2015). Organic architecture design approach where the form is dominant and influenced by fluid and dynamic shapes. Some architects claim that, no need to include sculptors in the archisculpture workgroup because they do not realize the surrounding

space on which architecture depends. Sculpture is essentially connected with its surroundings, and the sculptor cannot create his work without considering the place where he will be and how will be connected with specific external surroundings. David F. Martin wrote: ‘...the space around a sculpture, although not a part of its material body, is still an essential part of the perceptible structure of that sculpture (Hopkins, 2003). Henry Moore, attempt to make the forms, and the spaces inseparable, neither being more important than the other. He notes on form and space in sculpture “If space is a willed, a wished-for element in the sculpture, then some distortion of the form – to ally itself to the space – is necessary”... (“Henry Moore, Some Notes of Space and Form in Sculpture 1970, in (Henry Moore_ Sculptural Process and Public Identity) _ Tate,” 2015). Hegel, the German philosopher explains sculpture is distinctively related to the space in which it lies and interacts with that space (Farrelly, 2007). Theoretical view proves sculpture occupies the space, however in the 21st century archisculpture, architecture becomes the sculpture that occupies the space, and at the same time keeps the characteristics of the sculpture in shaping space (Nadja Kurtovic Folic, 2016).

Many architecture designers are not aware of the phrase “Form follows function” which published by Louis Sullivan in 1896 entitled “The Tall Office Building is Artistically Considered”. The “Form follows function” statement is used freely by non-designers in praise or critique of buildings, products, or infrastructure, even many designers are not aware that the phrase is incomplete (Smith, 2012). Form and space in art Architecture are presented to solve the problem related to function, purpose, and context not as ends in themselves but as means to promote endeavors, elicit responses and communicate meaning (Ching, 2007). This what Louis Sullivan declared, most importantly in organizing elements of the building, how the façade to be designed. He is concerned about the aesthetical form to solve function needs and that aesthetical form is not an impediment to function. The archisculpture style is strongly characterized by the external form or shape appearance. This category of the art architecture is described as ‘function following form’ (Farrelly, 2007).

Sculpture is a direct aesthetic form and completely unhindered by human functional or engineering limitations. According to Tschumi “the disjunction between expected form and expected use,” may result in a more exciting and satisfying architectural experience (Smith, 2012). The renowned Architects, like Frank Lloyd-Wright, Philip Johnson, Zaha Hadid, Tadao Ando, and others of acclaimed architects, endeavored to combine architecture and sculpture and they had given the form a careful consideration in their archisculpture designs, constructed as expressionist sculptures. As well, they proved that form could precede use; and use could be determined later. They believe that a building’s form did not need to represent its use.

4 Results and discussion

The result revealed that, in the past, a sculpture used to design according to elements of architectural order in order to be harmonized with an architectural setting. From the beginning of the 20th century, characteristics and reworking of sculpture concept dramatically changed. The outcomes of sculpture work are concerned more with society and recently it is connected to the urban and public arts more than in the past. The new concept in form and idea gave rise to the convergence of the interrelationships and interests in physical manifestations with modern architecture in an integrated and organic relationship. The new intimate relationship created the phenomenon of the archisculpture style, which realized the perfect combination of art and

practical function and became more expressive, and inclusive. (Guo, 2013). The archisculpture spread pointedly at the end of the 20th century and developed in such a sculptural way, which looks like a built-in version of modern sculpture, and go so far as to give the impression of continuing the history of sculpture in the form of buildings (Beyeler, 2005). As Walt Disney Concert Hall (Figure) and Guggenheim Museum Bilbao (Figure 18) designed by Frank Gehry. Zaha Hadid architecture such as the Art Centre in China Changsha Meixihu International Culture (Figure). The conceptual house of the Mexican architect and designer Antony Gibbon (Figure), which sits under a wave-like a piece of concrete within a landscape of rolling hills. Wolf Prix Pavilion 21 MINI Opera Space designed by Wolf Prix (Figure) which was built in the form of multiple pyramids with different sizes. Denver Art Museum, Frederic C. Hamilton Building (Figure), in the Civic Center of Denver, Colorado, has become a major cultural landmark, attracting thousands of visitors to the museum complex. The building was designed as a joint venture by Daniel Libeskind Studio, Denver firm and Davis Partnership Architects. Archisculpture is about form and space-making as a sculptor does in his work. Engineering constraints can limit the architect from art emotion, which will affect the aesthetical form. While sculptor has a direct expression of emotion that materialized aesthetic forms (Guo, 2013) to meet the spiritual needs of humans, without any functional restraints. The sculpture function is containing symbolic meaning, unlike the architecture function is for people living in, which plays a decisive role in judging (TÄLJSTEN, 2007). The appearance of the building is one of several factors that can interest architects, in contrary to the sculptor; the aesthetic appearance is the main purpose in his work. This confirms the importance of the sculptor's presence within the architectural system when creating sculptural architecture. Pablo Reinoso says Sculpture provides greater creative freedom; it is an experimentation ground. The freedom from functional restraints allows the appearance of new shapes and concepts that eventually influence the architecture. The Swiss art historian Markus Bröderlin wrote in his introduction for Guggenheim Bilbao, from the end of the 19th-century modern sculpture has been influenced by architecture. No one can visit Guggenheim Museum Bilbao or Hungerburgbahn railway station and will not feel like as he in front of a colossal sculpture by Hans Arp or Vladimir Tatlin (Bröderlin, 2005).

The process of modeling sculpture is quite different from designing an architecture building. To achieve a harmonized form, which is well structured, and at the same time, giving an exact expression of its idea, that is not an easy work. Creating abstract form is the essence of modern sculpture, each angle you look or contemplate at with its intentions, have to appear in harmony, and all are bonded. The harmonized form needs a sculptor, who is more capable of creating a three-dimensional form with the best aesthetic solutions. According to Architect, the biggest problem is to model forms with curves "organic form" (TÄLJSTEN, 2007) even if using sculpture programs. Computer programs as CAD, Sketch-up, and many developed software can help, but it is still subjected to the experience of the artist much more of an architectural engineer. Sculptors possess the ability to have an advantage of fully understanding and grasping form, mass, and space.

The architect has to understand that; sculptor is the best to solve the problems of shaping form. Designing an art architecture should accommodate human activity, more than satisfying purely functional aspects. Archisculpture is a visual form appreciated primarily for its beauty and emotional power on visitors more than functionality. Frank Gehry and Zaha Hadid discovered

that attractive sculptural architecture could play an effective “marketing” tool for luring visitors to the city and attracting attention. Considerate of these principles - interrelated relation, between sculpture and architecture is necessary to lead to the convergence of the new borders between the two disciplines' academic extension. As well, to raise awareness about reconsideration and positioning of the sculpture role in archisculpture design. Creating a deepening dialogue between architects, sculptors, and researchers is a necessity, to be put into real practice.



FIGURE 17. WALT DISNEY CONCERT HALL (WDCH), LOS ANGELES, CALIFORNIA



FIGURE 18. GUGGENHEIM MUSEUM BILBAO, 1993-97, SPAIN (PHOTO: EMILIO I. PANIZO, CC BY-NC-SA 2.0)



FIGURE 19. COMPLETES CHINA'S NEWEST CULTURAL CENTER



FIGURE 20. THE TWISTED SCULPTURE-LIKE CONCRETE HOUSE BY ANTONY GIBBON, ALIGNED THROUGH THE LANDSCAPE



FIGURE 21. PAVILION 21 MINI OPERA SPACE DESIGNED BY WOLF PRIX



FIGURE 22. DENVER ART MUSEUM, THE EXTENSION, WHICH OPENED IN OCTOBER 2006,

5 Conclusion

The fact that there are many overlapping principles, between archisculpture architecture and sculpture, particularly in concept, form, space, and materiality. Implementation of archisculpture and sculpture is one of aesthetics explicit to interact with humans' spiritual needs. Sculpture is the result of the creative skill and imagination of the artist, expressed in a visual form, appreciated primarily for their beauty or emotional power. Sculpture is an art, liberated

from the functional limitation, which constrains architects. Sculpture focuses more on form and expression, and is able to interrogate the ideas and inspiration out of the context.

Architects should understand the vital role of the sculptor's contribution to archisculpture architecture team; this will get the cooperation and the relationship more natural, efficient, and creative. The cooperation between sculptor and architect will generate a dynamic interrelationship and interaction of sculpture with the Architecture, supplementing the former historical relationships, and maximally expanding its horizons.

Nowadays, the idea of designing buildings with a shape became scattered and well-liked because of their aesthetic effects on cities and viewers. Therefore, a cooperation with a sculptor must be clearly formulated. Sculptors should be engaging in the archisculpture architecture team as essential members of this multidisciplinary activity to create more exciting and interactive archisculpture buildings. Whatever we face many difficulties and challenges between the two disciplines' academics. We have to insist to create a deepening dialogue between architects, sculptors, and researchers, put into real practice, create integrated and organic interrelationships. Cooperation will help to create an objective environment and conditions for the creation instead of depending on the individualization in creation of archisculpture architecture.

Funding :

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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