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The Guggenheim Museum, Bilbao

Introduction

The Guggenheim Museum, seen in figure 1, in Bilbao Spain, opened in October 1997, is a partnership between the New York centered, the Solomon Foundation of Guggenheim, directed by Thomas Krens at that time, and the Basque Administration. While the Basque Administration funded the Construction, the Guggenheim Foundation provided the management of the museum and the art collection.

The museum was designed by Frank Gehry as a part of a renovation plan to bring the city of Bilbao out of the industrial crises it was going through and also as a part of krens' expansion program of going global by establishing a foothold in Europe (Bruggen 17). The intent of the museum's architecture was to exceed the original design of the New York Guggenheim designed by Frank Lloyd Wright, as for Krens, "The modern museum required a new concept as well as a new form" (Lewis 1). Therefore, he personally selected the architect, Frank Gehry, who is known for his deconstructed forms, resulting in "one of the most beautiful museums in the world of today" (Lewis 1).

This paper will discuss the context that influenced the design and site selection of the museum; it will then discuss the architecture of the building, the exterior form, the interior spaces, the material used, and the use of computer programing to bring this free form into reality.

Frank Gehry' background

Frank O. Gehry is a Canadian American architect and designer, "born Feb 28, 1929, Torento, Ontario, Canada". His original name was Ephriam Owen Goldenberg before he changed to Frak O. Gehry. His family moved to Los Anglos in 1947. (Gehry)

Gehry earned his undergrad degree in architecture from the University of Southern California (1949-51, 1954), while his graduate degree was in City Planning from Harvard University(1956-57). (Gehry) He had worked for several architectural firms when he founded his own practice, Frank O. Gehry and Associates, Inc in 1962. Since his opening, he "established a reputation as one of the most important and influential architects of his time. (Bruggen 205)

Frank Gehry's reaction against the cold modernists' buildings that had begun to appear in many cityscapes, made him experiment with innovative expression devices. Even in his early work,

one can see unique designs that emphasized integrity with the surrounding context. He was identified as a deconstructivist and a postmodernist, a deconstructivist for his ability to come up with the unexpected form and material, and a postmodernist for his play upon architectural tradition. (Gehry)

After founding Frank O. Gehry and Associates, Inc, Gehry became known as one of the most influential architects of his time. His architecture is distinctive by the way he incorporates new forms and new materials in a sensitive way to the visual and cultural content of its surrounding. (Bruggen 205)

Gehry's reputation reached its maximum in the late 1990s by the time he designed his masterpiece The Guggenheim Museum, Bilbao (1991-1997). (Gehry) He received several prestigious awards, some of them are Pritzker Architecture Prize, The Wolf Prize, the Inaugural Dorothy and Lillian Gish Prize, and the Praemium Imperial Award. His divers work includes, but is not limited to residential, museums, concert halls, and public buildings. Some of his work is The Samsung Museum of Modern Art in Seoul, Korea; University of Toledo Center for Visual Art, in Toledo, Ohio; the American Center in Paris; and the Walt Disney Concert Hall, Los Angeles, California. (Bruggen 205)

Context

Guggenheim Bilbao museum is a collaborative work between the Solomon R. Guggenheim Foundation, which provided the art collection and the Administration of the nationalistic Basque region of Northern Spain (Weston 222). Guggenheim museum of New York owns one of the most tremendous collections of 20th century art. Since the late 1980's the wealthy institution started an expansion program to make its collection more visible. The first step was extending

the museum, then the opening of a new building in SoHo. Its director, Thomas Krens' ambitions did not stop here. It followed the trend of globalization and headed to the next step, establishing "a new foothold in Europe". Krens did not want any friction with some of their respected colleagues, which included looking for major cities such as Paris and London. A more peripheral location was preferred. Bilbao was not the first considered place but after the other proposal was stalled, the interest in the Bosque city of Bilbao came into play. The agreement was signed in short time, as the museum's construction was financed by the city of Bilbao and the management, collection, and organization of future exhibitions was provided by Guggenheim (Donzel 145).

While plans were going for a new Guggenheim museum proposal in Salzburg, Austria, Krens was introduced to a group of advisors including a Basque representative. Several meetings took place in Madrid when he presented his concept of "an internationally expanding Guggenheim"? When the proposal for Austria stopped making any progress, Krens accepted the Basque Administration's proposal to be a partner in their museum project (Bruggen 17). This project was to convert a former wine storage, Alhondiga, into a cultural facility, as a part of the city revitalization plan. It was one of the oldest cast-concrete structures in Spain, which takes up an entire block, 2,800 square meters. As the building is in near ruin, the plan was to leave the interior and destroy the whale interior to have a glass bone fitted inside (Bruggen 17).

A question would be asked about why the Basque Administration wanted this partnership with the Guggenheim. After the city of Bilbao the heart of the Basque and the home of 50% of the Basque population, has lead the industrial community since its foundation, it found itself in an industrial crises, and was deteriorating as a result of this decline, leading it to lose motivation and capacity to attract projects; "Furthermore, cultured institutions were being progressively

abandoned with increasingly scarce resources, limited creativity and artistic - cultural promotion, and minimal nonpublic initiatives" (Guasch 75). As a part of its transformation, Bilbao had devoted major resources to urban renovation, including the airport expansion, the subway, the internodal station project, a central tower, and a suspension bridge for pedestrians over the Nervion River. The abandoned Alhondiga transformation into a cultural facility was also a part of the plan; however, the Basque's lack of expertise to run, and for they did not have an internationally renowned collection to put in the new museum made the Guggenheim fulfill the role (Bruggen 18). Another question could be raised about why Krens would sign such an agreement and take the risk of this "out-of-the-way cultural venue" (Bruggen 18). At the same time of Bilbao's industrial crises, the Solomon R. Guggenheim Foundation was going through its own crises as well. The foundation's leading museum in New York was closed for renovation, and the project of opening a new museum in Salzburg, Austria had stopped making progress for financial failure. To get out of this financial crisis it needed to renovate its strategy with an innovative project. This strategy was to: find a new concept of the museum that is able to lead the contemporary world of art of New York from abroad; revitalize the city by converting it from industrial to advanced services; modernized and internationalize the economy and people's mentality against an under-construction new European space; and provide "new cultural and avant-garde museum infrastructures acting as motivating symbols of leadership" (Guasch 77). The idea of the renovative museum comes from Krens' vision of what a museum can be in our time. Museums started in the eighteenth century as an idea of encyclopedia, then in the nineteenth century, it was the extended place. The eighteenth-century idea was to replicate the image of museums as encyclopedias, as people were non-mobile. For Krens, this type of museum does not meet the requirements for today's cultural acquisitions for many reasons. One

of them is the space capacity problem. The large scale of contemporary art does not fit is that with the facilitated mobility of contemporary society, museums do not have to be in the center of the universe to have a valid program. If the is important, people will come to it wherever it is located “[they] make pilgrimage to it” (Bruggen 19).

The site for the new museum was not the one that was proposed first. As mentioned earlier, the abandoned Alhondiga was in the plan. When Krens was asked by the Basque Administration for recommendations for architectural development, his first thought was to restore Alhondiga instead of destroying the interior; however, the old building had a problem of low ceiling, about 3.5 meters only, and the presence of rows of columns. Although Krens did not want to turn down the project, he found that the site could not work for it. At this point he wanted to get another opinion. Thus, he asked the Los Angeles architect Frank Gehry to come to Bilbao. Gehry’s immediate reaction to Alhondiga was not different from Krens. Alhondiga was an unworkable proposition for a museum; however, he proposed that it may be a better idea to transform the warehouse into a hotel while keeping the existing structure, as demolishing the exterior would destroy the fabric of the area. Its response to the Bosques’ question about the location he would pick was “by the river” as the Nervion River was being redeveloped. At some point, Krens and Gehry were about to leave the project as it became clear that Alhondiga is not going to work. At this point, when Krens discovered what “[he] called the geocultural triangle of Bilbao”, the waterfront happened to be located in the middle of it. It is an open area that is marked by “three major cultural facilities: the Bellas Artes Museum, the university, and the opera house’. Figure 2 illustrate the geocultural triangle and the site. In another tour in the city, he saw the spectacular view of the stretch of and along the river, and he spotted a parcel adjacent to the river that was

not well used. At first, shifting to the river was an obstacle as the riverbank consisted of many privately owned sections, but later it turned out to be a proposed site (Bruggen 24).

Fig. 2

Exterior Architecture

As Gehry has been known for his "quirky deconstructed compositions, the Guggenheim Bilbao was not an exception; however, unlike his usual literal celebration of deconstruction", for Bilbao his design was "a much tauter closed composition of writhing blocks". It is inspired by his design of Weisman Art Museum in Minneapolis, shown in figure 3 (Lewis 1). From the beginning, both Gehry and Krens wanted to outdo Frank Lloyd Wright's original building, Guggenheim New York, and they did in certain aspects, such as "the boldness of its abstraction, the aggressive originality of the galleries, and the spacious sweep of its atrium" (Lewis 1). One of the most successful aspects of this design is how the functional spaces translate directly and clearly on the exterior. The exterior consists of a cluster of explosive forms that is astonishing

from every angle. This sculptural force could only seem to be in its time by only a few works of Wright, Mies Van Der Rohe, and Kahn (Trachtenberg 572). The central atrium under the cluster is radiating outward into arms like a starfish. The longest of them extends along the river and under the bridge to end a non-functional tower, as we see in figure 4. This part of the design was Gehry's response to a condition of existing structure that bisects the site in a disruptive way. The road bridge traverses the site where it ascends toward the other side of the river, and the 10 by 30 meter gallery extends under the bridge to end up in a steel tower that rises alongside the steel columns that support the bridge. This way, Gehry engaged this obstruction with the museum's design effectively (Rainbird 1). The arc of the foot bridge along the river, in figure 5, designed by Santiago Calatrava was also included in the design as having it between the building and the river is inviting for walking alongside with the building keeping one company (Jehlen 4).

Fig. 3

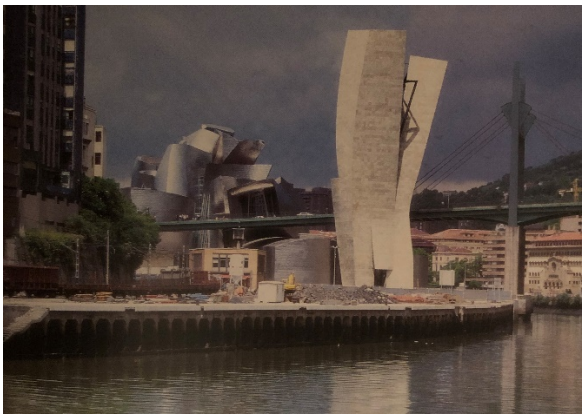

Fig. 4

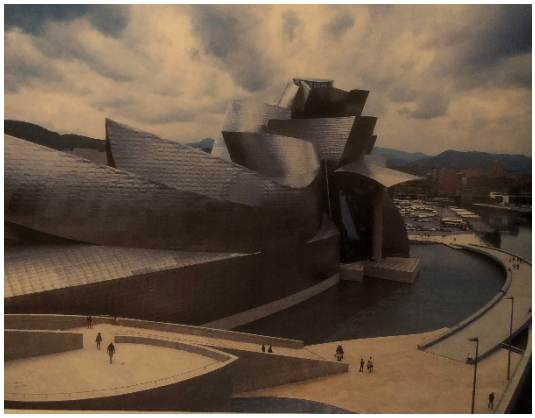

Fig. 5

Gehry exemplifies the theory of architecture being the first art. His Bilbao building is a sculptural work of art that attracts visitors to see the building itself. The shapes of the museum change with the change of the view angle. It could be a boat, a castle, a mermaid, or an artichoke. There is no concrete description that could capture the whole object, which makes its visual language invites metaphor that also changes by angles and perception (Zulaika 128). The change of the metaphoric shapes reflects Gehry's notion of expressing movement; however, movement does not require irregularity; we see here as no two pieces composing the form are identical (Jehlen 22). Gehry's forms are frequently compared with baroque geometries in the sense of energy they pulse, but this energy leads to a predictable direction, while Gehry's organic shapes do not lead towards an end (Jehlen 22). Gehry's sculptured forms have that sense of spatial drama that has something to do with the seventeenth century, but his language is different from the baroque in the way that a baroque building is analogous to a fictive body where physical qualities are evoked through architectural devices, but in Gehry's case, a curvilinear surface for example is not derived from molding a plastic material but from manipulating a frame (Lewis 1). "[Gehry's Forms] are not voluptuous in the sense of baroque form; rather than swelling and

bulging, their action is writhing and twisting, the effect that can be achieved by rotating a steel frame" (Lewis 2).

Even though the museum's futuristic form creates a contrast with the surrounding, it reacts to the historic content carefully. The urban plaza that Gehry created encourages people movement between the Guggenheim and the museum of art. Restaurants and shops are gathered around the plaza and accessed from inside the museum as well as from the plaza for more connectivity (Weston 222). The urban plaza steps down 16 meters to integrate with Nervion River (Mathewson 271).

Material

When it comes to the use of material, the building exterior is clad in Spanish limestone for the rectangular forms and titanium panels for free forms, which covers a major part of the building (Weston 222). The use of this shimmering material is what completes the picture with its change in color that reflects the change of light throughout the day. This scheme works perfectly with the shine of stone, the radiant cobalt of the entrance, and the reflection of the glazing that "enable the viewers to look deep into the building" (Donzel 154). The use of metal was a recall for Gehry's house; however, in the case of such a museum, the use of cheap corrugated metal had to be replaced by a luxurious option (Trachtenberg 572).

The use of this innovative material was an afterthought. The original plans shot for lead copper to the desired visual quality, but the environmental concerns about lead copper as being a tonic material made it banned. Other options were explored, such as steel as it was less expensive than titanium. Experiments took place with steel, and it went through coating, scratching, rubbing, and butting to replace the cold industrial feeling of it with the desired warmth, but the

results were frustrating. During that time titanium was considered for its potential. It was not commonly used for interior cladding at that time. For its strength, it was mainly used for airplane parts and many other uses that required its strength. The exploration with titanium took about a year to come up with the final desired picture (Bruggen 141). The titanium panels are less than two-fifths of a millimeter thick. Having them this thin makes a panel warp like foil as it is installed and ripple with the wind, "the panels of titanium are laid like shingles, producing parallel seams across the skin of the building that have no relation to its architectural lines" (Lewis 2).

The Interior

The Guggenheim Bilbao museum's entrance is not like a typical museum's entrance. As seen in figure 6, Instead of having ascending ceremonial stairs, the visitor is taken to the interior through a descending ramp-like approach, which emerges into the most dramatic space in the building, the atrium (Lewis 1). The atrium is the heart of the museum, as "it works like a heart, pumping the visitor around the different galleries. Its height, 164 feet, gives you the Gothic cathedral feeling as your soul rises up on this uplifting space. Looking around inside the atrium, you see all the different mediums of circulation; walkways, elevators, stairways; that lead to the different gallery spaces in a way that is different from how the great museums of previous ages used to be (Guasch 37). However, the same routes are used for both, public and moving art around the building. This makes it challenging to display while keeping the museum running (Rainbird 1). Instead of linking the rooms from one to the other- where it feels like there is no escape as you must visit room after the other - the atrium is the escape space, to which you can return after visiting any of the galleries to fuel your soul before going to another gallery. This

comes also as a response of the demanding and complicated nature of modern art, so it gives the visitor the opportunity to relax and absorb what you see (Guasch 37).

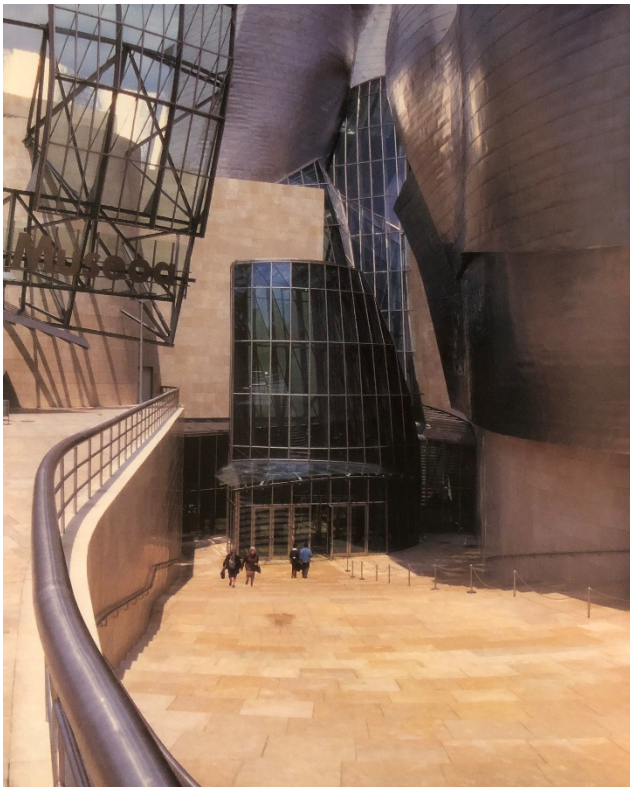

Fig. 6

Except for the floor, every surface in the atrium is a curved surface. It gives the space its warm welcoming feeling to prepare the visitor for the art it contains (Guasch 37). The irregular twisted piers of stone and metal rise up high to gather in a “lagoon-shaped” skylight just emphasizes the cathedral feeling of the space (Lewis 1). One of the pillars, on your right as you enter the museum, holds up a large stone bon, which is a small gallery (Guasch 37). “Gehry notes that his atrium was loosely inspired by the expressionist sets of Fritz Lang’s 1926 film, Metropolis, which would take it back to the futurists and their dramas of elevators that swarm up the facades like serpents of glass and iron. However, Gehry has a joyful vision at the futurists' apocalyptic images (Trachtenberg 572).

Gehry responded to the foundation requirements for the three different types of exhibition. He designed three radically different types of spaces for the dead artists' work, the living artists' work to spatially separate classic modern art from contemporary art, and a space for temporary collection. The galleries are arranged above a platform of service areas (Weston 222). For "dead artists", he created traditional galleries with rectilinear shapes for "living artists", "[since] they can fight back" (Lewis 2). The largest gallery in the museum was designed for temporary collections, which is known as "the fish gallery", because of the long, curving shape of this part of the building is divided,....., from the shape of the fish". It is a 3200 square meter room, 150 meters long, and the height changes between 12 and 25 meters. The reason for the size of this room is the enormous size of contemporary art pieces. Therefore, this was designed to accumulate the big scale artwork that artists began to create (Guasch 38). Masterful lighting was designed for this 450-foot room to give a living architectural environment to the contemporary artwork on display (Trachtenberg 572). One of the artwork pieces of Bilbao is a 30-meter-long steel sculpture, in figure 7, by Richard Serra, and another one is 5 by 10 meters paintings by Anselm Keifer. (Rainbird 2)

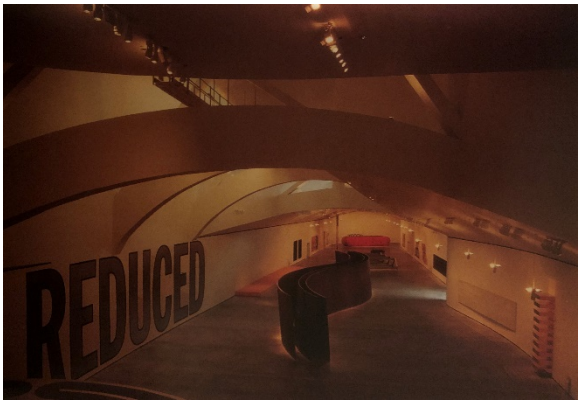

Fig. 7

When it comes to natural lighting, Gehry's design alternated completely

opaque walls and roofs with transparent surfaces to create dramatic light change. This was mostly noticeable at the double-height atrium space, showing Gehry's ability to create that uplifting warm environment inside his buildings (Mathewson 299).

The use of computer

The use of computer programming is what facilitated the execution of Bilbao's museum design. Without it, the construction would not have stayed within the budget allotted by the Basque Administration. Catia is a computer program that is originally made for the aerospace industry, and it became the choice for Jim Glyph, a principal of Frank O. Gehry and Associates, when he was looking for the best program to execute the large scale fish sculpture for the Villa Olympica camplen in Barcelona. He preferred this program over other ones for its capability, which means that any point on that surface can be found by a computer query. This means that many manufacturers and contractors could realize the job in less time and cost, and with more accuracy (Bruggen 135). At first, Gehry's concern about the use of computer program was about limiting Architecture into simple geometries, but then it became a way to convince the manufacturers and contractors he consulted, as their claim was that his sculptural shapes cannot be built or they were uneconomical. As their limitations became his cum, he went back to Frank Lloyd Wright's theory "[that] an architect has to be a master builder as well" (Bruggen 136).

Conclusion

The role the Guggenheim Bilbao played in revitalizing the city of the Bilbao is unique. It achieved a successful model in rethinking the museum's ideas, as culture can be a motor of economic development and it should be included in any development strategies. The Guggenheim also presented a successful model in showing art, as everyone has the right to use it,

learn about it, and understand it. It promoted tourism to the city - 60% of visitors from outside Spain- improved residents' quality of life, created new business activities, and became an attractive venue for conferences, seminars, and courses (Guasch 85).

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