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NEW DESIGNS IN CIRCULATION AREAS AND MUSEUMS THE CASE OF THE QUAI BRANLY MUSEUM

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Abstract: During the Pre-Modern Era of 1970s; new buildings questioning general typologies and offering advances in terms of design and function are started to be built. Architects not only looked for unattempted block structures but also their quest for unattempted block structures were continued for internal places, too and internal implicit setups were designed using ortographic tools like plans and sections. In today's museums; new and multiple circulation routes are designed; in which visitors do not read books from beginning to end but choose their own paths and walk through the exhibition as if in a labyrinth on their own. These radical perceptional, spatial changes and spatial scenarios are particularly emphasized in museum buildings. These new spatial arrangements in circulation areas are offering new spatial experiences with irregular gaps in sections, regular but non-geometric floor plans, vagueness of the borders, striking colors, patterns and materials, differentiated circulation parts (stairs, moving stairways, elevators, platforms, bridges). In the study; Jean Nouvel's Quai Branly Museum (2006) which is a recent example of this striking change will be analyzed thorough spatial experiences, observations, geometrical analysis technique and spatial examinations.

Keywords: Circulation area designs, museums, Quai Branly Museum

Sirkülasyon Alanlarında Yeni Biçimlenmeler ve Müzeler: Quai Branly Müzesi Örneği

Öz: Modern Sonrası 1970'li yıllarda genel tipolojileri sorgulayan tasarım ve işlev açısından yenilikler getiren yapılar yapılmaya başlanmıştır. Mimarlar, özellikle 1980 sonrası müze tasarımlarında, hiç denenmemiş kütle arayışlarında bulundukları kadar, bu arayışı iç mekanda da sürdürmüş, plan ve kesit gibi ortografik araçlarla kolay algılanmayan, iç mekan kurguları tasarlamışlardır. Günümüz müzelerinde, sergilerin baştan sona okunan kitaplar olmadığı, insanların birçok yol arasından kendilerininkini seçip sergiyi kendi adımlarıyla gezebilmesi düşüncesiyle, yeni sirkülasyon kurgusu, bulmacamsı bir havayla insanlara bir anda, birden çok seçenek sunan sirkülasyon rotası sunmaktadır. Özellikle müze binalarında, iç mekan kurgusunda, sirkülasyon alanlarının tasarımındaki bu köklü algısal, mekansal değişimler ve mekansal senaryolar dikkat çekmektedir. Çalışmada sirkülasyon alanı kurgusunda bu çarpıcı değişime bir örnek teşkil eden daha yakın tarihli bir çalışma olarak Jean Nouvel'in Quai Branly Müzesi (2006), mekansal deneyimler, gözlemler, geometrik analiz tekniği ve mekansal irdelemeler kullanılarak analiz edilmiştir.

Anahtar kelimeler: Sirkülasyon alanı tasarımı, müzeler, Quai Branly Müzesi

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1. INTRODUCTION

Derived from the word 'Mouseion' in Ancient Greek, the word 'museum' refers to the temples devoted to goddesses named Moses (Eratos) and the hill separated for Moses in Athens in Greek Mythology. The same word is also transferred to Latin, other western and world national languages as 'Museum' (Gerçek, 1999). In Ancient Greek, there are nine daughters of the God Zeus and his wife Mnemosyne. All these nine daughters are believed to live in this temple named Museion. The first foundations of museums are established during this period, when artistic creativity is attributed to Mnemosyne and when it is started to put all beautiful, unique, attractive and legendary objects into Museion (Artun, 2006).

Museum concept–which dates back to antique Greek temples, progressed with the initiation made by bourgeois who exhibited their own art works in a part of their houses during the late 17th century. Progression of museums -which were first designed for exhibition and preservation- can be separated into three subtitles: pre-modern architecture, modern architecture and post-modern architecture.

1.1. Pre-Modern Architecture

Traditional museum plan typology of pre-modern architecture can be classified as palace-museums and temple monument museums (Atagök, 1999).Traditional museum buildings are generally constructed with re-use of historical buildings after the restoration. Of those buildings transformed into museums; palaces come first. Palazzo Medici –the house of Medici family- is accepted as the beginning of European museums Uffizi Palace which was designed by Vasari in 1560 for administrative offices and then was transformed into museum in 1584 to exhibit art works has been a reference point for museum studies and exhibition designs (Artun, 2012). (Figure 1-5)

Figure1.2.3.4.5.:
Uffuzi Museum, Giorgio Vasari, Florance, ground flor plan, (URL-1); The sculptures on display in themuseum's niche column (Photo: Erhan Ataoğlu, 2011)

With the effect of Vasari gallery; halls and long corridors of Louvre were considered as the most appropriate areas for exhibitions. Louvre is the most impressive and the largest of all universal museums and is the prototype of many national museums and municipality museums (Duncan and Wallach, 2004). (Figure 6-10).

Figure 6.7.8.9.10.:
Glass pyramid entrance lobby designed by I. M. Pei, halls and long linear corridors and grand stairways (Photo: by author and Okhan Ataoğlu, 2013)

Glyptotek (1816) designed by Leo von Klenze in Munich and Altes Museum designed by Karl Friedrich Schinkel in Berlin have been regarded as museum typology called as Temple Museum with rotundas and monumental stairways (Atagök, 1999).19th century museum areas are often planned around a central rotunda like pantheon or an atrium. This central area is the start and finish points of the ritual walk performed in the right and left galleries (Duncan and Wallach, 2004; Tietz, 2008). Pantheon's dome during the golden ages of the museum became its symbol (Artun, 2012). Rigid layout outside these museums is generally prepared with the same rigidity as in exhibition planning (Pevsner, 1976). (Figure 11-15).

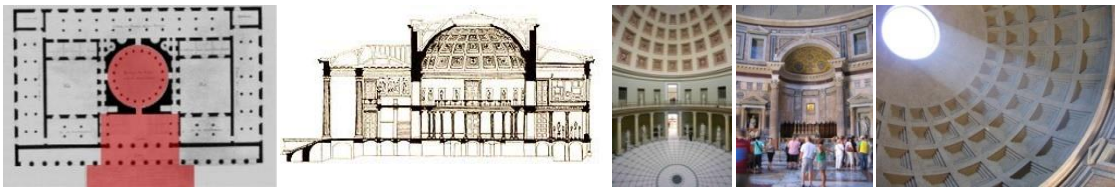


Figure 11.12.13.14.15.:
Altes Museum, Karl Friedrich Schinkel, Berlin, 1823-1930, plan, section and rotunda, (URL-2), (URL-3), (URL-4); Panteon, Roma, interior space and rotunda (Photo: Erhan Ataoğlu, 2011).

1.2. Modern Architecture

In terms of producing the necessary architectural designs; unprecedented structural needs that astonished the architects occurred in the 19th century. Buildings of world exhibits pioneered the 20th century museums. Transparent and glass structures like Cristal Palace designed by Joseph Paxton for the first world fair (London, 1850-51) later demonstrated their influence on the museum buildings constructed in the mid 20th century (Roth, 2000)**.** With the effect of Modern Architecture and Bauhaus; museum architecture started to move away from 19th century neoclassic museum architecture. With the museum designs made by pioneers of the modern architecture –like Le Corbusier, F.L. Wright, Mies van der Rohe, Louis Kahn-a new era started and museum architecture underwent a radical change in the 20th century.

Unlimited growth spiral museum of Le Corbusier was built in a square spiral form where circulation expands around a center infinitely and continually. Spiral square plan developed by Le Corbusier in 1929 and 1939 was first used in the museum built in Ahmedabad city of India [URL-5]. In the museum of Ahmedabad; spiral square plan produces spiral circulation design around the hall with an access ramp in the center of the building and thus a novel space-organization was achieved that allowed flexible walking (Besset, 1978; Barker, 1999; Artun, 2006).

Frank Lloyd Wright designed the building in the Guggenheim Museum in New York with a spiral ascendant ramp from entrance to the roof. Atrium in the middle is illuminated by a glass dome. It became an unusual and striking approach in the museum design to have constructed the exhibition-place -in which the whole site is perceived- with a spiral ramp idea which is the center of circulation.

In Kahn's plans, the division between service taking and service giving places was the main principle of his designs. Throughout his architectural career; Kahn used variations of this principle and designed the main areas providing flexibility and all-purposefulness (Gürel, 2002). Kimbell Museum has been donated with exhibition halls that permit flexible walking by letting natural light inside vaulted spaces (Anonymous, 2002).

In all of his buildings; Mies persistently designed open plan schemes that run towards each other and the repeated forms of these schemes with slight changes (Bilgin, 2002). In New National Gallery as in the German Pavilion in Barcelona (1929); Mies repeats his continuous space scheme in which he frees architectural volumes, creates no closed and static geometric

forms and uses vertical planes providing a continuous movement in visual angles (Zevi, 1990). (Figure 16-23).

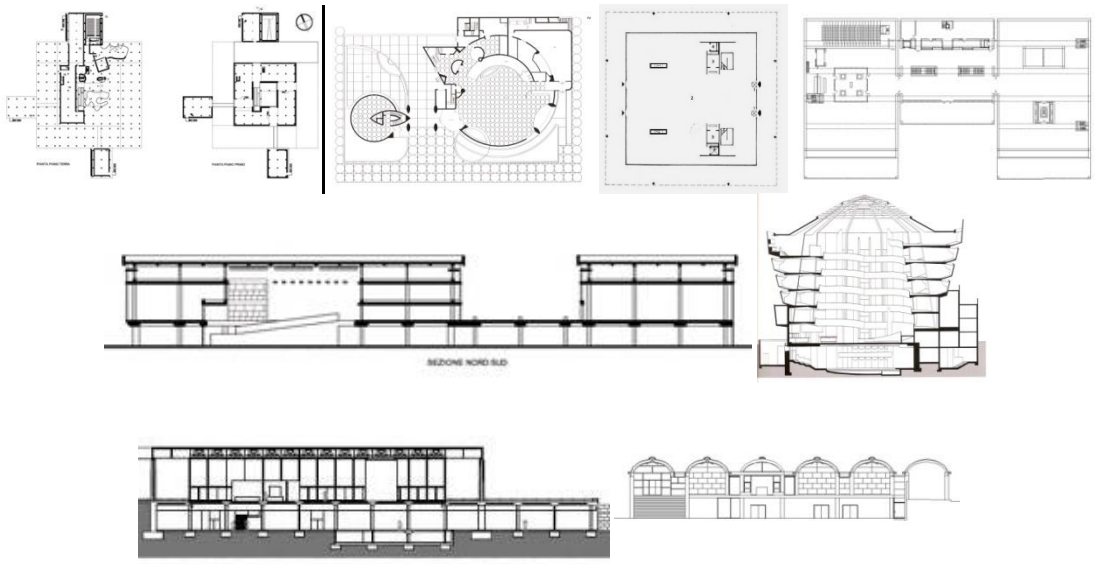


Figure 16.17.18.19.20.21.22.23*.:*
Plans and sections: Ahmedabad Museum, Le Corbusier, India, 1951-1953, (URL-5); Solomon Guggenheim Museum, F.L. Wright, New York, 1959; New National Galery, Mies van der Rohe, Berlin, 1962-1968; Kimbell Museum, Louis I. Kahn, Texas, 1967-1972, (Weston, 2004).

1.3. Postmodern Architecture

Museum buildings continued to increase in number during 1950s and 1980s became a turning point in the development of museum architecture. New constructions with novel advancements in design and function that challenged the general typology were created. Museums was turned into a culture-center with temporary exhibitions and shows, meeting and conference halls, research and study units, libraries, hobby spaces that enabled participation from all ages, workshops, cafeterias, restaurants, bars and museum sale-points. Museums whose collections were not visited again became dynamic culture and entertainment centers with continuously organized temporary exhibitions and educational activities (Broto, 2013).

Museums during 1980s were designed in the form of remarkable, iconic, monumental constructions where the architect demonstrated his creativity and which -transforming the city- provided an image and identity (Gür and Düzenli, 2002). Going beyond the typologies in the museums; museum buildings were regarded as art works. During 1980s; architects sought not only for unattempted quests in their museum designs but also never-tried pursuits in indoor spaces and created indoor designs which were difficult to perceive with orthographic tools such as plans and sections. Particularly; in the museum buildings, these radical perceptional and spatial changes and spatial scenarios draw attention in the design of circulation area of indoor sites. The Center Pompidou (Rogers and Piano, 1977), Guggenheim Bilbao Museum (F. Gehry, 1997), Jewish Museum (D. Libeskind, 1998) , Kiasma Museum (S. Holl, 1998) and Phaeno (Z. Hadid, 2005), Quai Branly (J. Nouvel, 2006), MAXXI Museum (Z. Hadid, 2009) etc. stand out with their monumental city museum characteristics, authentic forms and unique circulation designs. When circulation areas of these museums were analyzed; it was noted that they included flexible and authentic circulation schemes as well as classic typologies (Jodidio, 2011).

2. METHOD

In the study; analyses on circulation areas were performed using syntactic analysis technique developed by Clark &Pause (2005) in order to determine the architectural changes in the design of circulation areas in today's museums. To illustrate this notable change in the construction of circulation areas, Quai Branly Museum (Paris, 2006) designed Jean Nouvel was chosen. In order to demonstrate the changing circulation constructions in today's museum buildings; an analysis was made using spatial experiences, observations, geometrical analysis technique and spatial examinations in terms of the topics below (Ching, 2002; Ataoğlu, 2009):

- Geometry of the circulation area
- Continuity of the circulation area in floor plans
- Positioning of circulation cores
- Circulation routes
- Directing towards entrance lobby
- Sectional continuity
- Continuity in circulation area

3. THE CASE OF THE QUAI BRANLY MUSEUM

With its mass construction and the design of indoor circulation area; Quai Branly Museum is a design of recent history that features urban design principles, earns Paris a symbolic character and produces distinctive solutions. In its design reminiscent of narrow long shadow of Eiffel Tower; one of the significant points is that it emerges as a meeting point in the city with gardens, plants and green sites.

Tall glass paneling that faces north and parallels to the building and the longitudinal garden of 800 square meters where 15000 plants from 150 different species are seasonally grown isolate the garden from the busy street in front of them. The City garden functions as a surprising and inviting garden that includes an amphitheater of 18.000 square meters successfully added to the urban structure for open air performances and seminars. 29 box-like halls of different sizes and colors that protrude from north frontage constitute small galleries open to busy visitors outside. There is ticket-sale point in the unit under main exhibition platform that is 210 meters long and rests on supports which holds it 10 meters above the ground (Demeude, 2006; Nouvel, 2006). (Figure 24-26).

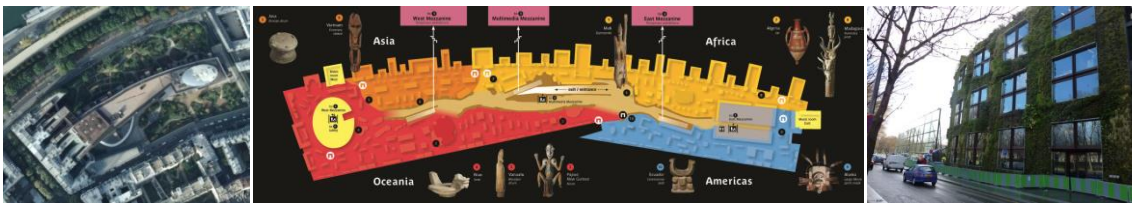


Figure24.25.26.:
QuaiBranlyMuseum, Jean Nouvel, Paris, 2006 (URL-6), (Photo: by author, 2013)

3.1. Circulation Construction And Spatial Experiences

Circulation scheme designed from the entrance can be thought as a spatial journey formed with Le Corbusier's promenade architecturale. Visitors follow the cylindrical structure under the

bridge in the garden and reach the entrance through curved pathway. Inside the white cylindrical space; there are entrance lobby, temporary exhibit spaces and ramp running into the main exhibit space. Spatial journey in the building starts with a ramp of 180 meters long running around oval glass tower which is located in white and luminous entrance lobby and in which musical instruments are exhibited. Continuously changing, unexpected and illuminated graphics reflected on the grey floor of the ramp add dynamism to the journey. With the end of illuminated graphics reflected on the grey floor; a long and narrow corridor animated with hot colors starts.

With the circulation space that transforms the color from grey to hot colors; a universal hall welcomes with colored, statue like three mezzanines of Quai Branly. This universal hall contains main exhibit collections from Australia, Asia, Africa and America being separated by four primary colors. Being separated from main circulation area with a zigzag; collections can be visited through a circulation route chosen at will. From the primary collection floor, three mezzanine galleries can be reached. The mezzanines arise over the platform as if they were swimming. The bodies are erected in a way that enables them to seem like statues (Anonymous, 2011). Different from the gallery spaces constructed with rooms added each other; Quai Branly provides perspectives that differentiate at each point. In contrast to the familiar white and neutral colors of the modern museums; hot colors used inside and outside the museum make Quai Branly an experimental art object by putting it out of the common museum perspectives. (Figure 27-36)

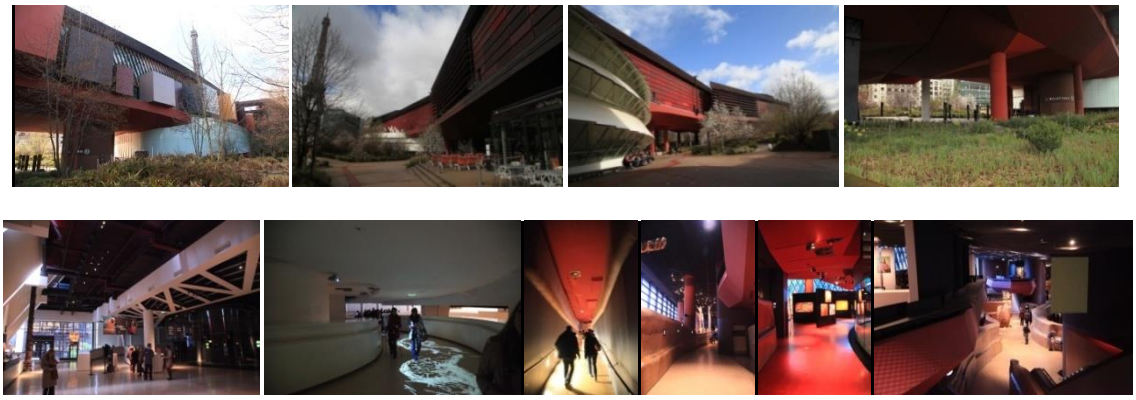


Figure 27.28.29.30.31.32.33.34.35.36.
Quai Branly Museum, Jean Nouvel, Paris, 2006 (Photo: by author and Okhan Ataoğlu, 2013)

3.2. Geometry of the Circulation Area

It is remarkable that circulation areas of the museums of pre-modern architecture like Uffuzi, Louvre, Altes museums were generally designed in regular geometric forms. Although circulation areas of the museums of modern architecture were generally designed in regular geometric forms; circulation areas were rarely planned in irregular geometric forms. Today; most of the museums (for example; Kiasma Museum, Berlin Jewish Museum) contain circulation areas designed in irregular geometric forms as in the case study of Branly Museum (Ataoğlu, 2009). (Table 1).

3.3. Continuity of Circulation Areas in Floor Plan

In the museum buildings of pre-modern architecture; it is seen that floor plans were regularly placed on each other. In the buildings of pre-modern architecture; continuity of circulation areas in floor plans was systematic, regular and coherent with section and circulation

areas on each floor looks like the repeated plans. The museum buildings of modern architecture lack radical samples of Le Corbusier and adopted Bauhaus ecole and therefore continuity of the circulation areas in floor plans is limited and multi-alternative in terms of construction section systematics. Circulation areas in the ground floor and the 1st floor in Quai Branly Museum, here being studied as an example building of post-modern architecture were colored and scanned. When most of the museum buildings were examined; it was seen that circulation areas changed in every floor as in the case study of Quai Branly.

3.4. Positioning Circulation Core

Position of the circulation cores like stairs, ramps, lifts in the building:

- May regularly be designed at certain distances. As sub-options; they may be constructed on the sides, in the center, around the atrium of the building and around the atrium of the building and on the frontages.
- May randomly be designed.
- Have been assessed under the titles of combination of these systems.

In the museums constructed during pre-modern era; it may be suggested that positions of the circulation cores were regularly designed at certain distances in the building. During the modern era; circulation cores of the museums were systematically designed with free planning and functional approach. If we are roughly to get a general assessment of the museums of the modern era; it is rarely seen that circulation cores were randomly distributed in the building except some works of Le Corbusier, Alvar Aalto. As in the case study of Quai Branly Museum; circulation cores were designed as if they were randomly positioned in the building during postmodern era.

3.5. Circulation Routes

Circulation route-alternatives were assessed under the titles of limited alternatives and multi alternatives in the circulation routes. In line with the observations and experiences; it may be argued that circulation routes in the museums constructed during pre-modern era (Uffizi Museum, Louvre, Altes Museum etc.) were peremptory and provided limited alternatives. On the other hand; it may be established that the museums constructed during modern era offered circulation routes designed with flexible plans and limited alternatives. As in the case-study; circulation routes in the museums constructed during post-modern era may be multi-alternative.

3.6. Directing Towards Entrance Lobby

It was assessed under the titles of longitudinal-peremptory and multi-dimensional/multi-alternative entrances. In line with the examinations and experiences; it may be argued that circulation routes in the museums constructed during pre-modern era contained a straight and peremptory entrances into the circulation areas as in the Altes Museum. Although entrances into the circulation areas of the museums constructed during modern era are multi-alternative; it may be argued that entrances are directing the visitors with free and flexible spatial organizations in the circulation areas and hierarchal corridors. As in the case study –Quai Branly Museum- it may be argued that many museums constructed during postmodern era included entrances with multi-alternatives.

3.7. Sectional Continuity

Sectional continuity was analyzed in terms of regular and repetitious spaces and irregular and differentiating spaces on each floor. It may be argued that in the museums built during pre-

modern era; floor plans forming the sections were of regular and repetitious spaces. As for the museums built during modern era; there were floor plans that break the regularity in sections designed by the masters of the modernism. Yet; these were typologies differentiating on each floor but containing regularity. Bauhaus ecole buildings did not break this systematic regularity. For instance, as explained beforehand, sections of Le Corbusier presented irregularity while Guggenheim museum of Wright had a radical design with regular spaces assembled together. In the Quai Branly Museum; sections are irregular and differentiate on each floor. In the sections of many buildings that draw attention thanks to its novelty created by mass and its contribution to architecture; it is seen that their formations include generally irregular spaces and gaps.

3.8. Continuity In Circulation Area

Continuity in circulation area was assessed under surprising perspectives designed with directing and different scenario and constructions. It may be suggested that the museums built during pre-modern era were planned with indoor spatial constructions with the same perspectives all over the building. Masters of modernism created indoor spaces that did not lead to stylistic confusion but allowed a free and flexible planning and thus enabling the perception of the whole space with limitless visual angles. Le Corbusier's promenade architectural concept seems like as if it is the first example in which the effects of architectural scenarios with which the buildings were constructed still continue but it has still been criticized due to being peremptory. During the postmodern era; -particularly in the buildings built after 1980s- it was established that indoor spaces are constructed with different architectural designs offering different surprises and perspectives. In the inner photos; Quai Branly Museum provides spatial scenarios in circulation areas, surprising forms and different perspectives in the same area. With the ramp that reaches the platform that breaks through the ceiling and the zigzag pathway and hung galleries; constant architectural travel is planned in a spatial scenario where there are surprising and entertaining spaces added to each other.

4. RESULT AND DISCUSSION

Quai Branly Museum was assessed in light of the information that makes up general frame of Pre-Modern Era, Modern Era and Post-Modern Era through the criteria of geometry of the circulation area, continuity of the circulation area in floor plans, positioning of circulation cores, circulation routes, directing towards entrance, continuity in section and continuity in circulation area. In light of that information; it is possible to argue that circulation area of the museum constructed during pre-modern era presented regular geometric plans, regular sections, linear-peremptory routes with limited routes and no alternatives. As for the museums in the Modern Era; these characteristics of the pre-modern era museums loosened. However; during Post-modern Era; newly shaped circulation areas re-designed by Modern Era were constructed again with a new interior space concept. When this radical and striking change in Post-modern Era circulation areas was considered; why all these formal acts were needed and what these sophisticated shapes added to the designs were a matter of debate.

Interviews made with such architects and philosophers as Peter Eisenman and Odile Decq give light to circulatory setting that involves a continuum and fluency, which is also shaped by new spatial insight.

Odile Decq argues the promenade idea of maintaining a change without making any cuts when passing from one to another. Decq's approach into design similarly resembles to a movie roll that involves views with surprises, giving audience a pleasure while they are walking through the building with different routes, multiple perspectives and flying images all around, in which no corridor is required to walk from one room to another.

Being a deconstructivist architect, Peter Eisenman gets quite inspired from jailhouse drawings of Piranesi, called Carceri, and describes his multi-perspective spatial setting in his following interview:

"The space brings a standstill to audience when they perceive the image plane or perspective integrity in these drawings. This space, which used to be legible under architectural terms, got into pieces and came to a troubling and unsteady state. The image plane, monocular perspective and scale turned into a mess."

Eisenman constantly states in his Piranesi-like spatial works that he seeks to create multi-layer paths on which people move vertically in different manners. He designs such spaces that are located between outer circle and open spaces, with vertical movements and easily visible to see all levels when looked down or up from any points. These spaces, other than their constant look, presents a sequence of multi-piece images giving different effects and ideas for each, and also create a setting that disguises a range of imaginary space with moves and changes within itself.

Particularly in the museums designed after 1980s; there are radical and perceptional and spatial changes and spatial scenarios in circulation areas that draw attention; as in the example of Quai Branly Museum. These newly produced spatial organization in the circulation areas offer new spatial experiences with:

- irregular gaps in sections,
- irregular geometrical floor plans,
- borders and limits that became vague and ambiguous,
- striking colors, patterns and materials,
- alternative routes
- differentiating circulation elements such as stairways, moving stairways, lifts, ramps and bridges.

Table 1. Quai Branly Museum
Analysis on Geometry of the Circulation Area
1.Floor plan and Ground floor plan

Geometry of the circulation area: Irregular geometric forms
Continuity of circulation areas in flor plans: In the form of plans differentiated in every floor

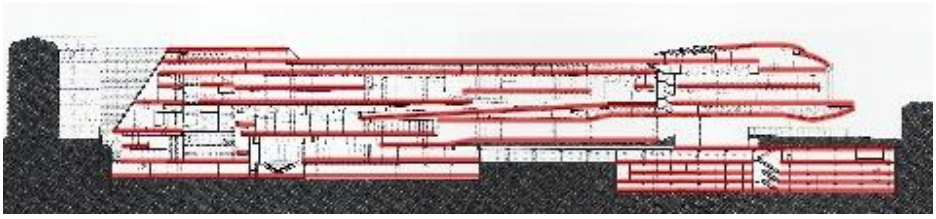
1. Floorplan

Positioning circulation cores: Randomly be designed

1.Floor plan and Ground floor plan

Circulation routes: Multi alternatives
Directing towards entrance lobby: Multi alternatives

Section



Sectional continuity: In the form of irregular spaces differential in every floor

Legend

Stairs, ramp, elevator,circulation cores

Circulation areas, hall, gallery, corridor, atrium

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