Casa Da Musica

Formal Strategies

Case Study

by David Cha
The chiselled crystalline form of the Casa da Musica is an architectural icon defining a new era of architecture in the historic city of Porto Portugal. A Rem Koolhaas (OMA) designed concert hall complex built in 2005, the Casa Da Musica can accommodate 1,650 patrons. Its design includes rehearsal rooms, recording studios, restaurants, and a prominent rooftop patio. Nicolai Ouroussoff, architecture critic from the New York Times, described it as the “most attractive project the architect Rem Koolhaas has ever built” and saying it’s “a building whose intellectual ardour is matched by its sensual beauty (Archiseek).
Urban context shaped Form

The urban context in which Casa da Musica was situated played an important role in the shaping of its form. It is located in a prominent area of Porto across from the plaza Monumento aos Herois da Guerra Peninsular which commemorates the victory of the Portuguese against the French army in the Peninsular War. Several major thoroughfares terminate at this circular plaza, which is one of the most prominent landmarks in Porto. The plaza serves as an important node and public space in which several corridors converge. Porto’s organic urban fabric of curvilinear streets and irregular lot shapes was a major influence in shaping the form of Casa da Musica. Viewed from the top of the building, each of the side elevations engages the public at the street level with its varying angles and window shapes. The building presents different views depending on the angle at which it is observed.

As one moves up the building to the chiselled roof deck at the top, the viewer ends up looking directly at the Monument to the heroes of the Peninsular War. The local context of the circular plaza and pathways leading to the monument/sculpture where important considerations for Koolhaas design of the Casa Da Musica. Koolhaas intended to reflect the circular plaza’s design by setting his concert hall as a monument centered in a public plaza.
Before designing the Casa da Musica, Koolhaas had worked on a suburban residential project in Rotterdam for a client who was obsessed with order and “...wanted to separate male and female zones around a common central room.” However, the client dropped out of the residential project. Koolhaus who remained interested in the forms created by private and public spaces, adapted the concept and used it for the design competition of Porto’s concert hall. Koolhaas’ idea of separating spaces “worked for the Porto program as a way of creating separate areas for the public and the musicians and bringing them together in the concert hall”. It also served Koolhaas’s goal of breaking from the traditionally ridged form of concert halls and opening it up to the activity of the city around it. (Yaneva 88)

The form of Casa Da Musica separates performers and the public from each other. The performers enter below grade to their rehearsal rooms, and the audience enters the main lobby and public amenities above grade. Both groups remain separated until they enter the auditorium on the third floor, which is the most significant and symbolic space in the building. The meeting of both groups for the first time in the auditorium creates an exciting and tension filled setting for the performance to take place.
Instead of designing a “shoe-box” like concert hall, Koolhaas has designed a postmodern architectural piece. Casa da Musica is an example of shifting away from the conventional rigid forms of the concert halls, and exploring new ways in which new forms can represent this typology. Although, Giulio Carlo Argan, the author of “on the typology of architecture” states that types cannot be imitated, Koolhaas has achieved his goal of keeping the typology while being “expressive in form” (Yaneva 87). Looking at other projects done by Koolhaas and OMA such as the Seattle Public Library, “the Casa da Musica uses off-balance forms to create a kinetic experience for visitors as they move around and through the building.” The edge of the exterior and interior space is rigid structure is an example of postmodern world. The postmodern world is one in which we have surrendered a sense of the unique and personal. The form of the building represents consumer, media, information and electronic society. (Jameson)
Exterior - brightest point

Exterior - Edges

Bibliography

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Symmetry & Proportion

Although the main body Casa da Musica is defined by its asymmetrical form, the main auditorium space is characterised by its proportional and symmetrical arrangement. The symmetrical layout can be alluded to Leonardo Da Vinci’s Vitruvian man which is a study of the ideal proportions and symmetry of the human body. Just as the balanced core of the Vitruvian man serves as the focal point of the body in which the extremities are connected, auditorium in Casa da Musica is the symmetrical central space in which the other parts of the building are organized around.

Agrest notes in, Architecture from Without; Body, Logic, and Sex, “without symmetry and proportion, there is no precise relation between the members as in well shaped man, there can be no principles of design” (Agrest, 177). She stresses the importance of symmetry and states that, “symmetry being an essential feature in the design of temples and proportion being the correspondence among measure of an entire work” (Agrest, 177).

OMA determined in their research with acoustic specialists that the acoustic quality of concert halls was that the most successful acoustics occur in rectangular or “shoe box shaped” auditoriums. In order to retain a high standard for acoustics, OMA created a balanced and proportionally shaped auditorium. However, the rest of the building designed around the symmetrical auditorium follows an asymmetrical and highly irregular arrangement.
Hierarchy & Order

Through examining the organization and scale of the different sections of Casa da Musica, it becomes apparent that the auditorium is located at the center of the building. This was done purposefully by the design firm Office for Metropolitan Architecture (OMA) to emphasise the importance of the auditorium as the most significant and symbolic space within the building.

The human form is a system of organized hierarchy in which the important parts are located at the top and center of the body with importance descending as one travels down the form. As stated by Agrest, “the body, transformed into an abstract system of formalization, is thus incorporated into the architectural system as form, though the orders, hierarchies and the general system of formal organization allowing for this anthropocentric discourse to function at the level of the unconscious” (Agrest, 180). Just as the human body has a hierarchy and order of different parts, the Casa da Musica has a hierarchy of different spaces within its form.
The importance of hierarchy within the space is revealed in how people enter the Casa da Musica. The performers enter below grade were their rehearsal rooms are located, while the audience members enter at grade through the main lobby. Both groups do not meet until they enter auditorium which is located at the core of the building.

As Colomina states in his writing, “the relationship between architecture and the human body becomes particularly important”. Casa da Musica reflects a program in which the structure of the building follows the organization of the human body and its functions. Like the human’s internal parts, the building program is connected with each other.
Healthy body

Casa da Musica is an example of the human body represented in architectural form. OMA following in the tradition of architects such as Eames and Le Corbusier, which hold architects responsible for the well-being of their building and its inhabitants similar to how physicians care for their patients (Colomnia, 235). The human body needs regular treatment so that it can remain strong and healthy. In comparing the medical body and architecture, Agrest states that, “the building is truly a living man. You will see it must eat in order to live, exactly as it is with man. It sickens or dies or sometimes is cured of its sickness by a good doctor” (Agrest 181).

As stated by Colomina, “the medical body in modern architecture...the house is first and foremost a machine for health, a form of therapy” (Colomina). In order to create a healthy indoor environment and good acoustics, OMA utilized a variety of sustainable materials such as concrete mix, tiles, canopy and different wall finishes. An important material used for the windows of the auditorium is corrugated glass. Corrugated glass allows natural light to penetrate into the auditorium while providing a sense of privacy from the outside.
Development

The circular plaza in which Casa da Musica is situated in the core of Porto acts as a reproductive system in the built environment that surrounds it. As stated by Agrest, “the Main square (piazza) should be placed in the middle and the center of that city or as close as possible, just as the navel is to man’s body” (Agrest).

Observing the development process of the human fetus, the unborn child is connected by an umbilical cord to the mother’s womb. During the nine months of developing in the womb, the fetus receives its nutriment from its mother until it is born. When the child is born, it must begin breath on its own to survive, rendering the umbilical cord useless. The central plaza acts as a womb which protects and nurtures the public life of the local environment.
Bibliography


The Office of Metropolitan Architecture (OMA) has a unique perspective when approaching complex design problems with social, economic, formal and political factors. In relation to Lars Spuybroek’s arguments on form in The Structure of Vagueness, OMA’s approach to design strategies and techniques is unique when compared to other architect’s office. OMA’s projects are not driven by computational techniques, digital fabrication or mathematical systems and rules such as “bending, splitting, curving, nesting, aligning, merging,” (Spuybroek 355). Instead, OMA focuses on a building’s program as the determinant for its construction techniques. Although its technique programs are distinct, OMA is recognized as a leading firm in architecture and design that has influenced a generation of new architects and professionals. OMA’s projects are successful and often become iconic structures highly regarded by both professionals and the public. However, Albena Yaneva notes in Made by the Office for Metropolitan Architecture: An Ethnography of Design that, “architectural theorists still desperately trying to understand his style,”(Yaneva 12).

In comparison to Frank Gehry and Zaha Hadid, Yaneva notes that Rem Koolhaas rarely draws preliminary sketches. She observes that models serve as the most important medium during the preliminary design phase at OMA. “...design at the OMA often begins with collective experimentation at the table of models and not with a single-authored sketch; it is made by and ‘is a response to a certain network’ of architects, engineers, contractors and consultants, drawing software and drawing hands, boards and tracing papers.” (Yaneva 10)
Rem Koolhaas based his design for Casa da Musica’s design on an earlier residential project for a client in Rotterdam. The client was obsessed with order, and wanted a program that separated male and female spaces around a commons area. The plan for separate private spaces centered on a common area was subsequently used for Casa da Musica. A movement pattern in the circulation of the building demonstrates the intention to create separate areas for the public and the musicians, only bringing them together in the auditorium. The concert hall is the shared central common area and the most symbolic space in the building. This technique in circulation design reveals that both the public and musicians would remain largely separated from each other. As the musicians would travel from their rehearsal rooms to the auditorium, they would only have limited interaction with the public. As Spuybroek notes on circulation techniques, “we should feed circulation into structure, feed structure into perception, and feed perception into circulation, “(Spuybroek 359).
By examining the organization and scale of the different programs within Casa da Musica, it becomes apparent that there is a clear hierarchy of spaces within the building. Spaces for the public are located primarily at the top of the building and spaces for musicians are located at the bottom of the building. Between these two sections is the auditorium which is the largest space and is located at the core. By using a grid technique to divide the sections of Casa da Musica, a clear demarcation between private, public, and shared spaces emerges within the organization of the building.
Order & Connection

The hierarchy of order between the spaces of Casa da Musica is comparable to the hierarchy of order within the human body. The human body demonstrates a hierarchy of order in which the most important organs are located at the top and descend in significance to the least important at the bottom. The first set of diagrams demonstrates the interactions between the brain, heart, and intestines within the body.

This hierarchy of order can be seen in the organization of Casa da Musica where spaces for musicians and the public remain separate until the two forces are joined together in the auditorium. The auditorium is at the core of the building and symbolizes the important connection that the heart has to the human body.
The circular plaza near the Casa Da Musica is the heart of public life in Porto. It serves as a landmark that provides safety, culture, light and direction for residents of the city. The chiselled form of Casa Da Musica blends in with the central plaza and imitates the built environment around it.
Bibliography


What is the formal logic of space?

In the readings of The smooth and the striated by Gilles Deleuze and Felix Guattari, “the striated is that which intertwines fixed and variable elements, produces an order and succession of distinct forms, and organizes horizontal melodic lines and vertical harmonic planes. The smooth is the continuous variation, continuous development of form; it is the fusion of harmony and melody in favour of the production of properly rhythmic values, the pure act of the drawing of a diagonal across the vertical and the horizontal.” (Deleuze Guattari 478) Casa Da Musica and the public plaza space is an example of Smooth and Striated space where the horizontal grid of the organic urban fabric of curvilinear streets (Smooth Space) meets the vertical grid of the chiselled crystalline form of the Casa da Musica concert hall (Striated Space).

You can also discover Koolhaas’s intention of the order of the Smooth and Striated space as people move up the building. On the roof deck of Casa da Musica, the viewer end up looking directly at the monument to the heroes of the peninsular war. This is Koolhaas’s intention to emphasize the importance of the monument by setting his concert hall to face the public plaza (smooth) and the monument (striated). In a way, Koolhaas is utilizing the idea of the “smooth space” of the monument to the Casa da Musica by positioning the Concert hall in the center of the public, “smooth space” to also express the importance of Casa da Musica in respect to the monument to the heroes of the peninsular war.
How is space governed?

Debord explains a psychogeographic map as being “insubordinate to the usual directives” of a conventional map. Furthermore, it uses the “influences and attractions which determine the habitual patterns through which residents negotiate the city.” (McDonough 250) The public space of Casa da Musica engages more casual habitual patterns compared to a more sacred and serious public plaza space of the monument. Compared to the circular plaza with circulation walkways in order and symmetrical landscape with big trees planted to isolate from the city, the public plaza of the Casa da Musica is very open and flexible. Something tells me that through the shape of the building and openness of the public space, Koolhaas really wanted to attract locals to the Concert hall where the music can “organize movements metaphorically around psychogeographic hubs.” (McDonough 246) Although from the street you cannot actually see people in the auditorium, the lights, tiles and people milling in the other exposed rooms will provide a spectacle. “The building creates an amazing sense of event and talking to Porto residents, everyone is curious to know what is inside.” (Bizley)
How does your space deal with time and how might this space evolve over time?

“In design process we also need the previous things to arrive at this stage. You cannot just create an intelligent scheme out of the blue. When you do design, even the schemes that are abandoned, hundreds of models, can be recognized within the process. They are just the different steps in the process. Design does not start from scratch. The models at OMA are not only kept because they can be recycled in design but also enable different forms of reuse, which never grow up into stories as glorious as the Porto story of reuse” – Rem Koolhaas

(Yaneva 89)

As I stated earlier in the case studies, “the Casa da Musica scheme started life as a design for a house. In typical provocative style, Koolhaas describes how he “had a flash of insight that the house would actually work better as a concert hall. So [he] enlarged the house five times and used it as the entry for the competition.” (Bizley) The OMA has turned rejected residential project from Rotterdam, Netherland into a modified and adaptable concept to the concert hall and is currently the iconic building of Porto, Portugal. Casa da Musica does not deal with time or place. Although the concept of the Casa da Musica is actually derived from the residential project in Rotterdam, where client was obsessed with order; Koolhaas successfully managed to adapt the same concept to a new setting in a different time. The separation of private and public space around a common central room redeveloped into the separation of performers and the public around the main auditorium where they meet for the first time. “If you happen to be in Porto, you can still enjoy the Casa da Musica without knowing anything about the tribulations of its scale model and its metamorphoses from a Dutch private house to a public building in Portugal.” (Bizley) Blowing up its scale and adapting it to a new environment, Casa da Musica was a rejected concept and was modified to accommodate a magnificent concert hall to many locals and tourists today.

