

Research Paper

How Architecture is Conceived, the Case of Fondazione Feltrinelli Building in Milan

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Received: December 2020, **Revised:** October 2021, **Accepted:** November 2021, **Publish Online:** December 2021

Abstract

Architecture lays on the intersection between art and science. However, while the social effects of architecture are coming to the fore, there emerges to be a notion that technological progress in the construction sector demands more scientifically inclined research in the field. This notion can not be segregated from the technical aspect and it is through this notion that architecture can be conceived fully with respect to both art and science. Feltrinelli building in Milan may be a great example to understand how architects reinterpret place, language, and program by way of “authorial gestures”. This article tries to break down Feltrinelli building to its essential elements in order to get a better understanding of how these elements are technical, while they play a significant role in architectural poetry and make a unique whole with a distinguishing character. In order to get into essential elements, we used architectural techniques such as site survey, modeling, photography, and drawings. By the use of these techniques, we can clarify our point that the way architecture is conceived goes beyond mere functions and techniques.

Keywords: *Feltrinelli building, Architecture, Place, Program, Language.*

1. INTRODUCTION

“In the mid-1950s, Ernesto N. Rogers envisaged two possible breakthroughs for architecture: improving building techniques to assess its figurative language as a vital part of each physical reality; improving expressive skills, so that this figurative language may further encompass the cultural values into which new forms were historically rooted. Invoking for a balance between the artistic and the scientific spirit of architecture” (ROGERS, 1958).

“Technology and architecture are two conflicting elements of design that, just like utility and beauty, are bound to find an agreement and reach a synthesis. When both are open to dialogue and experimentation, the challenge of technical achievements and the

pursuit of new expressive forms become all the more exciting, and the shared work of architects and engineers all the more fruitful” (Neri, 2017).

In this line of thought, contemporary outstanding works of architecture follow both. The construction techniques are at such a level that almost any imaginative figure transfers to the physical reality. On the other hand, this freedom helps architects to envisage possibilities. They can express themselves with “architectural gestures” in such a way that social, historical, cultural, and artistic values would come to any desired form (Andrews, 2015).

Feltrinelli complex designed by Herzog & de Meuron Architects may be a great example to demonstrate this point. A contemporary building that enjoys technical innovations alongside architectural narratives. Built in Milan, Italy, on the site where it holds ancient fortification, the complex represents its client, program, social context, and identity.

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It is essential to understand that although Herzog & de Meuron Architects took new technological innovations in this design, their ideas and language root in the history and identity of the city. As Herzog & de Meuron say: “The new buildings are inspired by the simplicity and generous scale of historic Milanese architecture as Ospedale Maggiore, Rotonda della Besana, Lazaretto, and Castello Sforzesco. They are also inspired by the long, linear Cascina buildings of traditional rural architecture in Lombardy, which already were an important reference in Aldo Rossi’s work, for instance, his residential building in Gallarate. Therefore, we propose an elongated and narrow architecture which, in a vaguely figurative way, introduces a roof which melts into the facades. Façade, structure, and space form an integrated whole” (Volpe, 2021). The “whole” as they put it is about continuity. Continuity as they say in building’s scale is about architectural elements and on a larger scale could be described in urban layout. The building summons references, fits in a preexisting environment, and becomes a part of a bigger whole.

This article will bring to the fore the notions that have contributed to the architectural narrative of the building. These notions vary in a different scale and sometimes refer to architectural concepts through architectural elements. Thus, we look at the building with architectural tools and investigate these notions. In order to get a better understanding of how architecture is conceived. In the case of Feltrinelli building, the mere description cannot express all the aspects that have been taken to account during its design. Thus, in addition to the site survey and interviews, we tried to look at the building as architects with our tools, in order to get an in-depth understanding of notions that place this building at the right spot in the crossroad between science and art.

2. LANGUAGE, PLACE, AND PROGRAM

“Architecture is about to reveal unexpected potentials. To do more than a building, to do more than the program and client’s requirement. To find possibilities, to offer something for society, community and urbanity” (ROGERS, 1958).

In 2012, Herzog & de Meuron Architects received a commission from Fondazione Feltrinelli. Feltrinelli family intended to expand their roots in Milan and they needed a place to express their multi-dimension activities and a building to represent them. As a result of this process, Porta Volta, the northern center of Milan was chosen as an ideal environment for Fondazione and service functions including a library,

a cafeteria, a restaurant, and other commercial activities (Piccarolo, 2016).

The emptiness of the area was due to the missing walls, which date back to 15th-century fortifications and once determined Milan’s boundaries. The main axis, via Alessandro Volta, connects the cemetery to the old city core.

The “dream commission” is what Herzog & de Meuron called it. This of course comes from the potentials that the city of Milan is offering them. A city where numerous numbers of autonomous buildings have aesthetic qualities and being open to possibilities has been always in its roots. Duomo cathedral, the most influential monument of the city, could be one example of this many, in which the debate for its style went in favor of gothic. Considering this, renaissance was becoming rooted in Italian architecture at that time, and in order to construct the cathedral, they needed to invite builders from northern countries. (Volpe, 2021)

Herzog & de Meuron are familiar with this embedded potential and well aware of the fact that to do a building in Milan, your building must contain a certain identity. Unlike their project in Miami, the idea here is not to boastfully display the building, but to interpret the place and add another layer of meaning to it which is peculiar for its place (Herzog, 1989). This identity also cannot be detached from the client, since architecture is representative of its client. Fondazione Feltrinelli with nearly 1.5 million archival items, 250,000 volumes, and 16,000 journals, has always brought to the fore the notions of an equal society. As a result, Feltrinelli Family becomes a powerful potential to create the identity and connection between users and the rest of the city (Piccarolo, 2016).

The program consists of offices, a library, a cafeteria, a bookstore, and a restaurant. It seems to be simple or even banal; however, Herzog & de Meuron find possibilities to go beyond the program. They cut the building in two, which results in dividing the program into two main categories: Fondazione and the rest. The cafeteria and bookstore are located on the ground floor, the auditorium at first floor with a double-height ceiling, and the roof structure’s sharp peak contains an expansive reading room and classroom. The technical facilities are hidden beneath the ground level since the triangular roof and transparency of the building do not allow other positions. The rest of the building is occupied by the offices which in reality were the primitive element of the program; however, the design manages to fulfill the requirement of the program by putting a great emphasis on the society and interaction between users and the city (Nastri, 2017).



Fig 1. Porta Volta gate indicated with boundaries in red color, the building on the left side has not been constructed, as the map is representing the initial idea

The initial design idea was to have a twin structure emphasizing the idea of a historic gate with a generous green area expanding the boulevard (Piccarolo, 2016). The built project is an active linear extension of a twisted frame which has got two opposed façades (see Figure 1). One side is facing a very tough street condition which is widespread in Milan and the other side confronts a green area. At ground level, the building rests on a series of concrete slabs offering sitting places for pedestrians. In addition to this, the southern side is also providing an outdoor café and a vast leisure area for any social classes, even though they do not enter the building.

The project, Fondazione Feltrinelli, at first looks like an ordinary building structure with no international significance as it has not gained traction at the world stage, however, the design concept and the details that have gotten into the project makes it a contender for a well thought out and unique design. To fully appreciate all the aspects of the building, the background has to be known to some extent. The architect Herzog takes inspiration for the design dating back to medieval times, since the site was constructed on top of an ancient wall serving as a barrier to the old city (Volpe, 2021) (see Figure 2).

The Fondazione Feltrinelli building, which sits on one of the oldest quarters in Milan, uses the memory of the wall to its advantage as it is designed to behave like the boundary or the wall pre-existing the building. There is an invisible boundary as the building is designed like a “naked skeleton” which is

supposed to give a meaning of a wall with its barebones structure. While the building acts as the part of an existing urban pattern in terms of size, form, orientation, and urban axis taken as a reference, it reveals its own language built on a strong sense of place (Madanipour, 2013). First of all, the building uses the most important city axis, via Alessandro Volta street direction, as a decisive axis for its structural form. Secondly, as the beginning and the end of the building follows the same direction, the building refers to the gate-wall fiction that exists in the memory of the place, with the wall integrated with the Porta Volta gate.

From the external perspective, the building takes on the shape of a long hermetically sealed linear structure with open spaces at the center and a color scheme giving shades of greys, thereby giving a sense of strength via its use of concrete in abundance.

Externally, there are two design elements worth mentioning, which give this building its distinguishing look and co-relate it to the surrounding. First, the triangular roof is merged with the building floors seamlessly. The design allows the roof to be melted into the structure without any seam or visible boundary. The skeleton columns angle in to form the triangular wedge and since these columns are already exposed to the outside, the angular shift gives a seamless look to the building as no reinforcing structure is needed to support the columns, thereby the roof.

In the vertical dimension, this wedge-shaped roof differentiates this building from conventional norms. The wedge is reminiscent of the ancient wall, at the site on which the building is built upon. As mentioned earlier, the architect Herzog takes inspiration from the gothic or even Medieval era and places the building to take on the symbolism as he tries to preserve the emotional attachment of the site (Volpe, 2021). This intention can be made more clear

with the linear design of the building, which in essence is similar to the ancient wall and hence the building plays on to merge itself subconsciously with the surrounding as well as the city by virtue of linking itself to the heritage of the site. Taken in this context the overall design and in particular, the wedge at the top symbolize the building as a strong wall guarding the city.

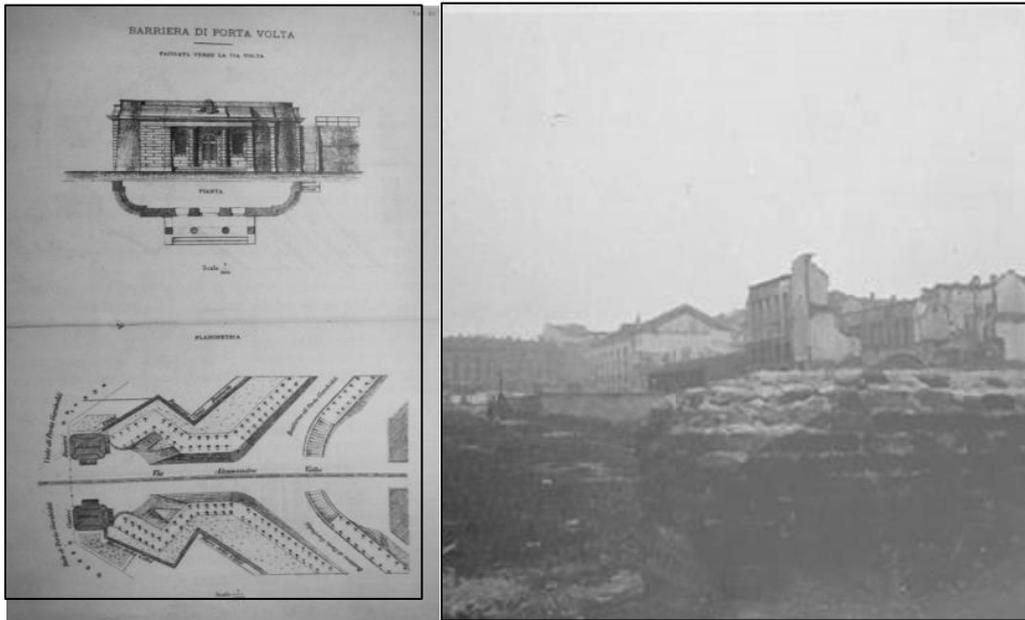


Fig 2. The relationship between the Spanish wall and Porta Volta Gate (Ref: book, Fondazione Giangiacomo Feltrinelli Milano-Portovolta Luogo Dell'utopia Possibile)



Fig 3. The building behaves as an urban block with a linear structure and a repeating structure and following the surrounded block layers (Photo taken by the authors)

The second external element on the horizontal axis is the boundary element, which extrudes from the vertical columns of the skeleton. With these extrusions, the building takes on the simple form of floors stacked on top. These extrusions continue till the roof and give the skeleton its look. These extrusions on all floors have no physical features and are plain to be left out unutilized. It is worth mentioning that these boundary elements are there to give symmetry to the complete skeleton as these distinguish equal spaces and boundaries on the exterior. Furthermore, on the ground floor, the feature is synchronized with a façade, which is made to inhabit the public as it provides a sitting area and a sidewalk. Similarly, the second-floor horizontal extrusion provides cover and shade for the walkway.

It may seem at the first view that the two façades are identical, however the south-facing one has got roller shutter shading elements. This is a theme for façade in their architecture especially those which have been built in Switzerland (Moore, 2015). Those elements are done in black not to interfere with the uniform entity of the façade by being merged into window frames which are in black aluminum.

The structure as per the floor plan or even the exterior design scheme seems basic from all its external dimensions as it resembles a long rectangular column, which in essence gives an impression of simplicity. Furthermore, the skeleton structure or the column beams spaced throughout

the length with floors of concrete gives a raw external appearance. With all the measures taken to give simplicity to the building, the structure presents a complex internal spacing when viewed from the inside thanks to its oblique ends. These oblique ends give an internal symmetry and tilt to the building at the horizontal axis, which contributes to the building's unique identity as viewed from inside. The building presents a very modern, sleek interior with open spaces and the columns creating an intricate web to give an impression of open yet tightly integrated, complicated, and sophisticated internals. This design scheme can only be realized in person as the floor plans do not do justice to the intricate interior.

Two adjacent frames are all we need to read the composition. They constitute a hermetic volume and this volume extrudes to the site. The frame reads and responds to the urban pattern through its rotation. It seems that the overall volume is a process of evolution from urban blocks to repetition of naked frames and to spatial configuration. This rhythmic repetition of frame creates a coherent narrative and poetic synthesis between space, structure, and facade. Whatever we see is at the same time structural element, spatial definer, and a part of façade. The deliberate choice of horizontal slabs which are in total contrast with the verticality of the surrounding buildings merges the building into the urban atmosphere through the balance between tensions (see Figure 6).



Fig 4. The intercourse of horizontal and vertical elements within the building and the surroundings (Photo taken by the authors)



Fig 5. The interior and exterior views of the façade (photo taken by the authors)



Fig 6. The model shows how the building has transformed from space into the structure, from the structure into the place, or vice versa (Interpretive Model made by the authors)

The use of skeleton structure opens up spaces from the inside as it takes away the need of reinforcing the weight with the conventional use of columns. Hence, the skeleton not only gives rigidity and a sense of strength on the outside but serves as a design feature to make avail virtually all of the floor space to be utilized. Internally, the building owing to the predominant use of concrete floors with pillars and the open spaces gives the structure a feeling of an open public place as the structure to open space ratio

is low, which is generally the characteristic of modern airports or train terminals (Edwards, 2004). As evident in Figure 6, the complete floors are available without intrusion from columns or walls, and a completely open deck can be utilized as needed. So space in three dimensions is created.

Decomposing the frame into its prefabricated elements will bring us the notion of syntactic composition in Palladian architecture, however, those elements cannot be labeled as columns, slabs,

rooftops, etc. since they are all columns and rooftops and façade at the same time; they constitute one whole (see Figure 7).

A narrow gap separates Fondazione from the Feltrinelli building. Though two autonomous structures are reflected, they make one. This sudden opening up to the urban void is a reference from the city pattern and also the perspective (Gualini, 2005). The opaque façade has the same relation with horizontal slabs as the transparent front one. It seems that the filling between the frame and horizontal slab is interpreted as the wall, whether concrete or glass.

The space changes dramatically in the triangle volume while tilted frames bring the sensation that the space is falling. It brings the illusion of uncertainty and once again the hidden window frame helps to lose yourself in outer space. The unique space which goes far beyond structure and its

program heals the fracture between thought and feelings (Champion, 2018). Three-dimensional volumes take an extra role, apart from being the separator/organizer of spaces and hosting services, they become the furniture-like library. In this space, for the first time we notice that although everything has been organized symmetrical, the space itself is asymmetrical. This notion is the result of twisted frames that are forming the boundary around the activities inside.

The twisted frame is the powerful ingredient of this architectural contribution. This naked structure is a theme that can be found in the Miami Parking Lot and Beijing National Stadium and is familiar in Herzog & de Meuron architecture. In the case of the Feltrinelli building, it is very figurative and at the same time abstract.

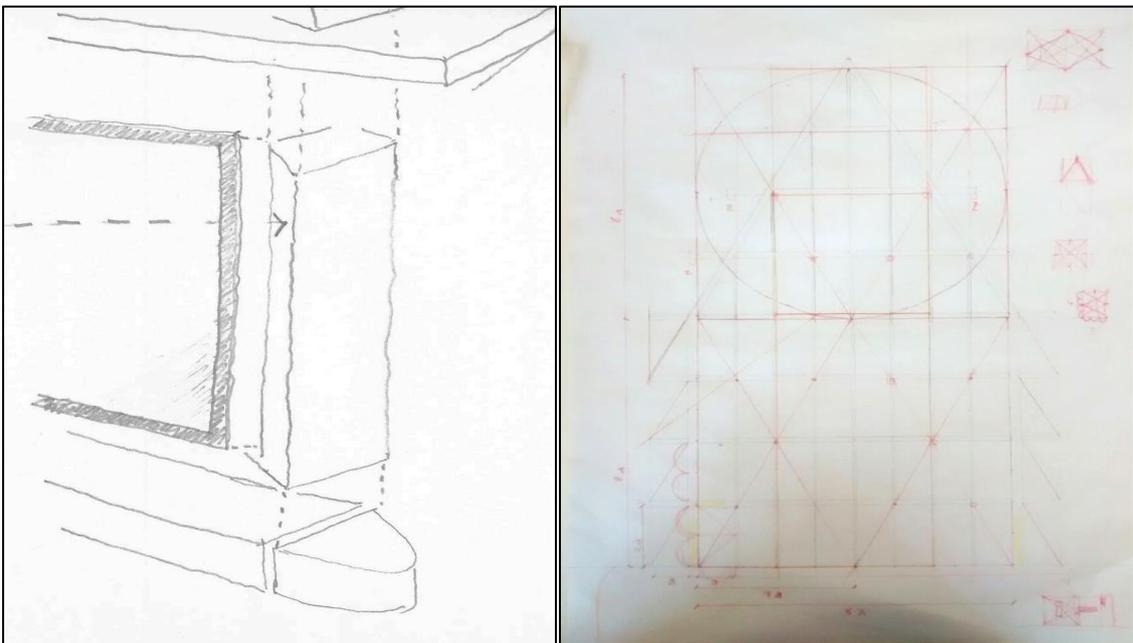


Fig 7. The left figure shows that resurfacing elements forming the architectural composition; the right figure shows that the façade is designed with a certain holistic logic (drawn by the authors)



Fig 8. The unique sense of space created by the perspective of the structural body (Photos taken by the authors)

3. CONCLUDING REMARKS

Herzog and de Meuron visualized the architectural language of the long, narrow buildings based on simple geometries, the modular repetition of structural components, and transparency. The building's offering to the society is not only about public programs, but also to create interactive spaces and enhance those which are existing. Today, it seems that the Feltrinelli project has been interpreted as an urban project, revitalizing the area of Porta Volta.

The building creates strong contrast with its surrounding in terms of transparency, materiality, rhythm, and technique. However, Feltrinelli is all about continuity. "The concept of continuity implies change within the order of a tradition" (5). The architectural notions that Herzog and de Meuron borrow from history, culture, and in other words identity of Milan and Italian culture make Feltrinelli a true Milanese architecture.

They were able to go beyond the program and through their own architectural language, they add another layer of identity to the place. Their understanding of construction techniques allowed them to not only create an engineering masterpiece, but also a true work of architecture. The Feltrinelli building is one among many in contemporary works of architecture that demonstrates the way architecture is conceived with a great emphasis on both art and science.

REFERENCES

- Andrews, N. (2015). "The Architectural Gesture." *Log* (33): 137-155.
- Champion, E. (2018). Norberg-Schulz: Culture, presence and a sense of virtual place. *The Phenomenology of Real and Virtual Places*, Routledge: 144-163.
- Edwards, B. (2004). *The modern airport terminal: New approaches to airport architecture*, Taylor & Francis.
- Gualini, E. (2005). The region of Milan. *Metropolitan governance and spatial planning*, Routledge: 278-298.
- Herzog, J. (1989). *Herzog & de Meuron*, Gustavo Gili.
- Madanipour, A. (2013). The identity of the city. *City Project and Public Space*, Springer: 49-63.
- Moore, R. (2015). "Two decades of Herzog & de Meuron." *The Architectural Review* 3: 79-89.
- Nastri, M. (2017). "*Studio del sistema di involucro di tipo integrato.*"
- Neri, R. (2017). "*The forms of reinforced concrete construction: the Velasca Tower, Milan, 1950-1958.*"
- Piccarolo, G. (2016). "Herzog & de Meuron, Feltrinelli Porta Volta, Milano."
- ROGERS, E. N. (1958). "Architettura e fotografia. Nota in memoria di Werner Bischof." *Id., L'esperienza dell'architettura*, Einaudi, Turin.
- Volpe, A. (2021). "Fondazione Feltrinelli a Milano/The Feltrinelli Foundation in Milan." *Firenze Architettura* 25(1): 32-44.

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HOW TO CITE THIS ARTICLE

Roasaei, H., Erdim, D. (2022). How Architecture Is Conceived, the Case of Fondazione Feltrinelli Building in Milan. *Int. J. Architect. Eng. Urban Plan*, 32(2): 1-9, <https://doi.org/10.22068/ijaup.620>

URL: <http://ijaup.iust.ac.ir>

