MEANING AROUND ABSTRACT FORM

AN ANALYSIS ON MARTIN STEINMANN'S SEMIOTIC APPROACH TO SHAPES AS OPEN SIGNS

By Paul Baumann Sepulvedae

ABSTRACT

Swiss Architecture, particularly in the german-speaking region of the country, shifts towards simple, clean and three-dimensional configurations between 1980 and 2000. There is a distinct intention of abstraction in order to remove socially conveyed meanings from edifications. According to Martin Steinmann, who resorts to the use of semiology, forms (or strong forms) should evoke more than the primary meaning of the building. Just like objects of art, shapes should be open signs that are not limited by a direct interpretation of their significance.

This essay analyses Steinmann's premise from a theoretical and practice approach, by recurring to Peter Zumthor and Jacque Herzog's point of view and a selection of their works. As a general agreement, architecture must move beyond from being just signs and become a proper language. But like any other language, to achieve that level of communication, it must introduce more complexity and components than just the volume's shape, such as: spatial context, coating and materiality. All these factors have communication skills by themselves and interact with each other, so the work of architecture can be perceived by the observer in an unconventional and sense-awakening way.

Vertiefungsarbeit In-depth Study

Meaning around Abstract Form

An analysis on Martin Steinmann's semiotic approach to shapes as open signs

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1 INTRODUCTION

1.1 ARCHITECTURE IN SWITZERLAND AROUND 1989



Fig. 1. Martin Steinmann.

To provide a general idea of what Swiss architecture around 1989 is, seems far from possible. There appear to be considerable differences in the practice (and therefore theory) of architecture among the regions of the country, according to their respective language. So, there is not really an architecture that can be summarized into an identifiable common concept. That is why, in order to narrow the theme and its geopolitical area, it should be clarified right at the beginning of this essay, that the focus is on the german-speaking region of Switzerland during these years. Particularly the circle related to ETH Zürich, its scholars and alumni. These Swiss architects' creations, unlike the exponents of the Postmodernist and Deconstructivist Movements, are solid, thoughtful and expensively built. Even though they are simple, they are easily recognisable as Swiss Products.¹ The works elaborated during this period are characterised by a very strong intention of abstraction, in which the potent and clear forms precede any clichéd design. It looks as if there was a breaking point, with the previous social conventions, to allow something new to be born and, in spite of the purpose of simplifying, a higher level of complexity to be conceived. Hence the term of Forme Forte: It is a "Strong Form", a shape that is so neat that evokes a reaction in the subject or inhabitant.

1.2 STEINMANN'S SEMIOTIC APPROACH ON FORM



Fig. 2. Le Corbusier.

Simple shapes are beautiful forms that evoke emotions, because of their clearness and lack of ambiguity.² Whether this is right or wrong, or subject of personal opinion, this is the premise that Martin Steinmann (1942 - 2022), Swiss architect, takes from Le Corbusier Le Corbusier (1887 - 1965) to give a first definition of what Forme Forte is. Not only Steinmann, but this period of Swiss architecture in general seems to have a particular fixation with abstraction ³, even to the extreme that buildings are conceived as objects ⁴ and as pure forms by themselves. We need to be reminded, that the concept of abstraction comes from the action of taking distance, in order to appreciate what is truly tessential. When it comes to objects or spaces, the process of abstracting also stripping details and ornaments out of the body. Consequently, the three-dimensional volume becomes the object of appreciation by itself. Although, Martin Steinmann takes another approach for abstraction in his essay 'La Forme Forte'. He deduces that a way of stripping the form of the unnecessary, comes from a semiotic point of view. Semiology is the study of signs, the relation of how they are used as signifiers for communicating ideas or concept, that is, a signified. Common signifiers could be

words, letters or icons. For example: the word "tree" (signifier), when read or heard, automatically creates a generic image of a plant with an elongated trunk, that can also be used as lumber, which actually concerns thousands of botanical species (signified).

- 1 Moravánszky, 2004, p. 13
- 2 Le Corbusier, 1923, p. 16
- 3 Davidovici, 2012, p. 12
- 4 ibid., p. 9

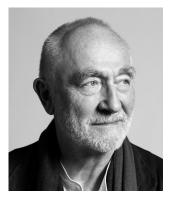


Fig. 3. Peter Zumthor.

For Steinmann, buildings should not become a mere direct sign for their particular function. All possible meanings of the signifier shouldn't be limited to one signified. He demands that:

"There must be a point at which forms are their own meaning". 5

1.3 MAIN QUESTION AND METHODOLOGY

This essay focuses on the semiotic approach presented by Martin Steinmann in "La Forme Forte", written in 1991. Furthermore, it will open the discussion to other relevant Swiss architects of the same period: Peter Zumthor (1943 -) and Jacques Herzog (1950 -). Adding two different voices, besides Steinmann's, would allow to expand the theoretical framework and to analyse the principle in constructed works. Comparing different opinions among each other, and complementing theory with practice, is meant to guide the research towards an understanding of the following main questions: To which degree and how are architectural shapes, from a semiotic point of view, freed from a fixed content or signified? And what architectonic elements take part in the communication as signifiers?

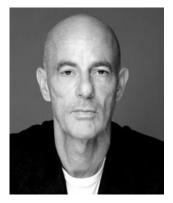


Fig. 4. Jacques Herzog.

The methodology consists on reviewing writings by and on the already named architects and three selected buildings: the Shelter for Roman Ruins in Chur (1986), by Peter Zumthor; the Ricola Storage Building in Laufen (1987) and the Signal Box auf dem Wolf in Basel (1989), both designed by Jacques Herzog and Pierre de Meuron. These masterpieces were chosen because of their relevance for this age in Swiss architecture and because all three of them are enclosed cuboids that do not provide a direct understanding of what they really are, when confronted from the outside. They somehow provoke a disruption in communicating their respective functions by disguising their content. All three buildings were studied in correspondent literature and observed on-site.

2 MEANING AND PERCEPTION



Fig. 5. Charles Jencks.

Martin Steinmann is not the first architect, and definitely not the last one, to try providing a semiotic approach in architecture. In 1969 Charles Jencks (1939 - 2019), an American architectural theorist and landscape designer, writes the essay 'Semiology and Architecture'. In this essay he establishes that the fundamental relation of semiology and meaning in architecture is that any shape in space, just like signs in language, has the capability of being 'motivated':

"Or we can take a slightly different point of view and say that the minute a new form is invented it will acquire, inevitably, a meaning." ⁶

One must be careful when reading Steinmann's 'La Forme' because it is easy to fall into the idea that he wants to detach architecture from its signifying condition. When he refers to conventional signs, he claims that they limit the meaning of a signifier to only one signified; whereas the signs and objects created by art are not restricted by that.⁷ The way we understand objects corresponds to context, particularly to our unconscious memory, and not only as mere meaning.8 From a semiotic point of view, we must remember that context plays a major role in how signifiers aim towards a signified. For example, let's take the simple symbol of an orthogonal symmetric cross (+). On a regular spreadsheet it indicates the mathematical operation of 'addition'; in chemistry and electricity it refers to protons and positive charges; and as a street signage it shows the near presence of a hospital. Consequently, it becomes imperative to say that, not only in architecture but semiology in general, the context of where a particular signifier is placed, definitely alters its signified. And that is the complexity and unlimitedness that Steinmann pursues for, that the form should evoke more and not only the practical function of the building as the unique meaning. But still, even if his demand seems more approachable now, there are still some factors that remain unclear, especially when speaking of the architectural form. Sure, objects respond to context but architectural works, moreover, respond to their surrounding spatial context too.

According to Jacques Herzog, objects by themselves mean nothing, their presence in space does not make them exist. It is the context, artificial or natural, that grants them the possibility of 'being'.⁹ And by 'being' they are then perceived by us, they can be named and thus express meaning.

On the other hand, for Peter Zumthor objects do not necessarily provide a message for us to read or discover, they just simply exist. Their existence is already more profound than just signs and symbols, since these objects are empty and open.¹⁰ Although his position seems even more radical, and at some point as if he completely neglects the presence of meaning in architecture, he adds that memory comes to surface from this emptiness. A memory, just as Steinmann clarified, that is activated by our previous experiences. And even if Zumthor had denied meaning behind shapes, if we remain on his radical approach; just by denying the presence of meaning, paradoxically, it ends up creating meaning, as Charles Jencks warns.¹¹ But to understand Zumthor's words, he thinks that meaning in architecture should not be a symbol for things that are

- 6 Jenks, 1969, p. 11
- 7 Steinmann, 1991, p. 190
- 8 ibid., p. 189
- 9 Herzog, 2002, p. 20
- 10 Zumthor, 1998, p. 5
- 11 Jenks, 1969, p. 12

not associated to its essence. Architecture should get rid of the misuse of non-related shapes and signs to finally speak its own language.¹² This previous thought by Zumthor somehow matches Martin Steinmann's intention:

"It is useful to use the word language, which also corresponds to the idea that a building represents a communication through its forms (in other words, it corresponds to a semiological idea of architecture as a "machine à signifier)" ¹³

In this case, if we treat architecture as an independent language, with its own ways of communicating, we have to comprehend it as a structure of components. After all, language is not just randomly arranged symbols: there is a proper structure in order to provide a concept or idea. Just as written communication has different elements (like sentences, words and letters), this particular analysis, of the already presented buildings of the study, will be decomposed according to: volumes standing in their contexts, their envelopes and materiality. Volume and materiality seem like a very common logic to apply into building analysis. Nevertheless, the envelope as a component for these three cases, seems to acquire a relevant recognition. Since it is, apparently, the main element supporting this condition of not revealing the function as a direct signified. And it is also what covers the forms so they can appear as primary abstract cuboid bodies.

Zumthor, 1998, p. 10
 Steinmann, 1991, p. 192

3 SIGNS OF A NEW LANGUAGE

3.1 SHAPES IN CONTEXT

As written before, context is completely important in order to appreciate and understand forms. When it comes to shapes, we cannot forget the issue of size and scale, and how it causes an irruption or blends in with the surrounding area. A chair-sized cube and a three-storey high cube (with the same proportions and materiality) produce completely different impressions. And if we take the same giant cube, the effects it creates by standing on the city would be absolutely opposite, to the ones it provokes on plain field in the countryside. Apart from that, location can give a hint on what a building's function is. Even without being able to look through the windows or reading the plaque at the main entrance (for example, in baking districts).



Fig. 6. Shelter for Roman Ruins in Chur. View from the backyard.

The Shelter for Roman Ruins (Schutzbauten für Ausgrabung mit römischen Funden), by Peter Zumthor, is a museum-like infrastructure in the city of Chur. The building protects and presents the original foundation walls of an ancient roman merchant houses complex, in a projection of the virtual volume:

*"It is an abstract reconstruction that does not refer to the building height or form, nor to the materials, but merely gives an idea of the original complex; it serves as an idea and guide to the design."*¹⁴

Besides the still standing ruins, the only parameter Zumthor takes from the original complex is its boundary. The museum is located at a local street surrounded by four-storey buildings (housing and offices). This area, does not look like a conventional location for a museum, it is quite on the city limits. Because of its height, the shelter does not really irrupt in its contexts: it somehow

14 E.H. and P.F, 1987, p. 40



Fig. 7. View of the Museum from Seilerbahnweg.

fits in the already drawn skyline that doesn't surpass the hills as the main background. Nevertheless, its "plain" facades (no readable storeys, no balconies, no conventional reliefs) grant the cubes a noticeable presence, as if these boxes were re-scaled or magnified and put on this location. And by 'boxes' it means that the complex reaches such a neutrality that one sees them as volumes instead of regular buildings. There are no other elements that protrude the exterior walls besides the street-level openings. And that is also the ironic and tricky part: one could interpret these openings as the main entrances, because of their accessibility from the street, their proportions, the porch-like thickness and the contrasting-to-wooden concrete frame. But they are not, they are just windows, that actually don't even open. From a semiotic point of view, Zumthor uses a regular signifier element, a doorway, but provides it with a different signified. So, to make a literary (and maybe naive) comparison: if this was a text, the word "sky" actually refers to the concept of "tree". The main entrance is located at a side, after going through an alley that intercepts the main street.

As Jacques Herzog tells, he and Pierre de Meuron like to question the scale of surroundings with their buildings:

"What is big or small? Why do you think something is really long or rather short? Examples of such investigations of scale are the Ricola Storage Building and the copper-clad Signal Box." ¹⁵

Unlike Zumthor's building in Chur, these two works create a notorious irruption in their respective situations, although both stand in very different contexts. The Ricola Storage is built next to an old quarry in the company's production facility. This case serves very well to clarify the difference between size and scale. The volume is 17 meters high, but it does not surpass the contiguous factory height, nor the embankment behind. The impression of "gigantic" comes from the fact, that the lack of windows doesn't permit to deduct how many storeys-high it would be, which makes one visualize it as an enormous box. But as for meaning, even if the box hides its interior, the presence of the fabric close to it configurates an

industrial atmosphere. But the form is not only composed by the cuboid silhouette. On the top, the element of the cornice provides the storage with an emblematic character, which allows to read it as more than just a room for piling products.



Fig. 8. Ricola Storage in Laufen. View from the arrival area.

15 Herzog, 2002, p. 23



The Signal Box auf dem Wolf belongs to the same master plan for the railway engine depot in Basel. Unlike the other smaller modules of the master plan, this cuboid appears in sight as a neat tall volume, since its six-storeys structure is hidden. Even though the location (right by the railway tracks) can communicate its function, the Signal Box reaches another network:

"In its urban context the signal box stands as a tower-like marker, entering into a relationship with the high rises of the surrounding district and seeking to link the rail site into its immediate environment."¹⁶

According to this, the project acquires the ability of intracting in the language of high-rise buildings, besides its original infrastructure purpose.

Fig. 9. Signal Box auf dem Wolf in Basel.

16 Mack, 1996, p. 29

3.2 ENVELOPES



Fig. 10. Roman Ruins Shelter during night.

Even if we would like to treat buildings as objects, regarding their high degree of abstraction, they will never achieve such goal. Unlike objects, edifications (the vast majority) need permeability to allow sunlight to heat the interior, to let wind ventilate rooms and permit inhabitants go in and out. Openings are an element that the work of architecture cannot disregard (until nowadays, at least). How could the shape detach itself from its direct signifier, as if it could interrupt the message about its function? One option is, in a way, hiding the interior. If the inside space is concealed by a solid surface, it clearly won't show what is happening to the outside: houses wouldn't expose families sharing dinner, offices wouldn't exhibit people working, etc. It would be difficult to unveil the building's reason of being. It is actually ironic that the applied method for stripping a volume from its usage signified, is covering it with a mantle. But then again, we face the issue of openings (basic for inhabitation), which has been established before. Nevertheless, all three buildings are enveloped by rather peculiar surfaces. The cladding, coating or wrapping, draws the outline of the abstract cuboids and obstructs the view into the interior. All this, while solving the openings dilemma, because they are permeable compositions and acquire the value (therefore, meaning) of windows. Yet, Martin Steinmann has a reluctance regarding envelopes, and warns:

"The design of a surface must make the form visible in its properties instead of swallowing it "like a parasite""¹⁷

It's hard to know if Steinmann would think that about these three cases. But, taking his own words, these buildings' envelopes make the abstract form even more appreciable. Plus, he neglects the fact, that the exterior walls are the elements holding the delicate balance of being radically abstract and being inhabitable.

For Zumthor, figuratively speaking, architecture is not a message nor a symbol due to its relationship with life. He rather describes it as an envelope or a sensitive container for people to carry out their lives.¹⁸ His intervention in Chur, consist of two main elements: the shell and the walkway. The shell wraps the archaeological vestiges while letting diffused light in. It also inherits the task of the windows (because they cannot be opened) of allowing wind and sound to enter. Since the wooden clats are arranged in a horizontal pattern with an offset distance between one another, this permeable boundary gives the information that this is not a house. It is rather a fence, with a veil-like resemblance during night, that protects a precious asset.¹⁹ This is actually the cube's sense after all: it is a barrier around something of value, and indeed not a museum. Another interesting trick that Zumthor executes is that the wooden plates are assembled in a downward angle. So even if the surface is permeable, it does not provide a complete image from the interior during daytime.

Jacques Herzog has also mentioned the topic of surfaces in architecture. He has expressed that he feels drawn to them as a designer, when surfaces become spatial, they become attractive.²⁰ His design for the Ricola Storage mostly concerns the facade composition, because the warehouse's size was already

- 17 Steinmann, 1991, p. 193
- 18 Zumthor, 1998, p. 3
- 19 E.H. and P.F, 1987, p. 40
- 20 Herzog, 2002, p. 24



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Fig. 11. The cladding of the Ricola Storage Building.
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determined by inside installations and the preceding steel construction.²¹ Furthermore, the analogy used for the cladding (which means, the project) gives away what the infrastructure is:

"The architects used a concept of a stack of boards, and image that can be seen in the sawmills all over the Laufen valley."²²

The concept becomes a suggestion for what the building is for: stacking and storing. So, despite the fact that the envelope hides the interior, it becomes the subject of the analogy and the language that communicates, in a cryptic way, the meaning.

As for the signal Box, its wrapping hides its six-storey structure and makes it appear as one block figure. The envelope, with its folds that let light to enter into the interior, is an analogy symbolizing its purpose. The copper coil concept for the

²¹ Herzog, 1988, p. 4

²² Mack, 1996, p. 153



facade comes from a translation of the serial construction of railroad tracks, which moreover communicates the electronic functions of the building.²³ In both of the selected buildings from Herzog & de Meuron, the analogies that were strictly applied for the envelopes (and not floor plans nor any other component) end up becoming unconventional but still direct signifiers of the shapes' signified: what they are and what they do.

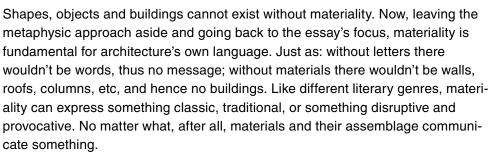
Fig. 12. Concept Model of the Signal Box.

23 Mack, 1996, p. 30

3.3 MATERIALITY



Fig. 13. Wooden fence-like surface of the Shelter in Chur.



Peter Zumthor thinks that exposing the essence of materials goes beyond any cultural conveyed meaning. Materials can acquire a poetic quality only when being deployed in an architectonic object, because materials don't posses a poetic condition by themselves. The materials contribute acoustic, smell and tangible dimensions, that are part of the language he applies as an architect. According to him, sense arises when the selected materials evoke specific significances that can be perceived only in their respective buildings.²⁴ The shelter for the Roman Ruins' envelope is made out of wooden laths, that interact and change their appearance according to weather and as time passes. The usage of timber in Switzerland is not only based on the material's availability and the local expertise for working with it, it comes from its faculty to suggest memory associations without falling into an imitation of vernacular shapes.²⁵ Wooden, in this case, imprints a sense of local identification and an image of an ordinary, rustic (and not symbolic) fence.

It is not that Steinmann didn't consider materiality, he just doesn't mention it in 'La Forme Forte'. But he does in his text 'Die Unterwäsche von Madonna' (Madonna's Underwear), in which he describes the music star as a woman who knows exactly what she does, especially if it is unconventional. The way she performs on stage or music videos in flashy outfits, that resemble underwear, is a provocation. She changes the meaning of "underwear": now it is not necessarily worn "under" clothing. What he tries to articulate, by bringing up the Queen of Pop, is that meanings are not completely fixed:

from what we know - a new meaning is determined as a difference from an old one - this effect is consumed over time. We get used to them, their meaning changes: through habituation." 26

An unconventional articulation of materials isn't just a provocation, it grants them new meanings and thus new norms of applications. In their practice, Herzog & de Meuron have reassigned new uses for various materials in an innovative manner. They have taken materiality not from traditional usage, but according to its physical and factual-corporeal qualities. The less materials are being limited by tradition, the more they motivate inhabitants' mental associations.²⁷ This is the reason behind the presence of Eternit (fiber cement) in the envelope of the Ricola Storage. Fiber cement plates are normally placed in buildings but not usually exposed (without any tricks to disguise or adorn them) in facades. Just like underwear.

- 24 Zumthor, 1998, p. 2
- 25 Davidovici, 2012, p. 97
- 26 Steinmann, 1997, p. 210
- 27 Mack, 1996, p. 8

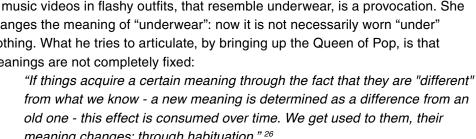


Fig. 14. Eternit plates assembled in the Storage Building.

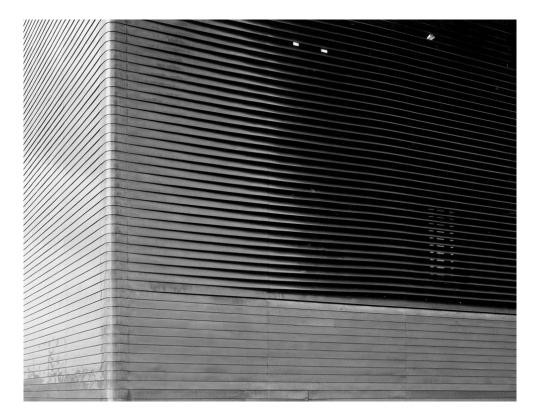


Fig. 15. Folded copper slats of the Signal Box.

As for the Signal Box, maybe copper clads are more often seen in postmodern international architecture, but it still remains untraditional. Despite the fact that metallic coating has become part of a style in recent years, the Signal Box has more sense to be wrapped around it: it unmasks the electronic nature of the building. Ironically, materials in these two references have received new definitions in construction customs, but they truly enforce the revelation of their primary signified. They operate in an alternative set-up, another language. But they still provide the same information: Eternit for industrial infrastructure and warehouses; Metal for electronics and mechanics.

4 CONCLUSION

Particular meanings haven been assigned by social convention to certain shapes, elements and styles. According to Martin Steinmann, simple clear forms (that don't get overshadowed by ornaments) not only evoke emotions, but also become more than the mere symbol of their reason of being constructed. For this, Steinmann (from his semiotic approach) suggests that it would be proper to use the word "language", since buildings communicate meaning(s) through form. But for the "Forme" to become "Forte" and that it can be a more than a unidirectional sign, it needs a more complex language than just the pure shape. Even if a building achieves an incredibly high level of abstraction, it will never be just the form. Architecture and communication (hence architecture as a communication "format") have complex structures for providing information on the subject. Shape is only one component of this language.

Objects are comprehended according to their context. But can the architectonic work be treated exactly like an object? Not completely, because architecture also has to respond to physical context: surrounding space. An edification (virtual or actually built) will always be inserted in a singular situation. And the situation can also impact on how the shape is perceived and understood. The background won't reveal what an enclosed mysterious volume is, but it can give a hint. So far, though, Steinmann's position is still relatable. An abstract six-meter-high solid cube on an empty field, of course, causes a visual impact and arouses curiosity, unlike a regular house of the same proportions. But one of the considerations he neglects, is the effect that size and scale bring to the discussion. A cube that fits in one's hand, by the way, does not cause the same excitement as its giant counterpart would.

It is true though, that full abstraction is a mechanism to discard the unilateral significance associated to shape or an object. But as indicated before, buildings are not objects and noy just shapes. Unlike objects, edifications have to provide the possibility for inhabitants to interact with and in it. Thereby, the volumes have a reason to be built, in the first place, and to prevail. Permeability is essential for people to enter, and for natural lighting and ventilation (among other basic factors) to bring minimum conditions for them to inhabit. A way to maintain the balance between detaching the building from an obvious interpretation and still being habitable, is wrapping it with a continuous but still permeable surface. For the sake of semiotically striping the edification, it has to be clothed with a new mantle. And even if Steinmann warns that the envelope shouldn't become the star element, the surfaces of all three cases not only follow the intended concept, but they certainly strengthen it.

On the other hand, the same shells that allow the buildings to be clear figures, are the ones evoking its function. Just like the Zumthor's Shelter in Chur precisely induces a wooden fence that delimits and protects something within it; Herzog and de Meuron's Ricola Storage Building figuratively resembles a pile of boxes, that in reality serves for stacking products; and the metallic cladding of the Signal Box paraphrases computers and railway tracks, which makes sense for a railway traffic control tower. These three compositions do indeed speak a new unconventional architectonic language, while also being strong abstract shapes. But at the end they essentially communicate the same. They are, as speech and physical embodiments, signifiers of their primary signified. They just deliver the message in an allegorical coded way.



Fig. 16. Bus Station in Rotterdam.

Steinmann also exemplifies his opinion with the Rotterdam Bus Station, in which the roof element transcends its function.²⁸ But why would a bus station need to become an open sign? Why should it have multiple interpretations? Leaving all corporate design and city signage aside, isn't it beautiful that a station can express its function by its own and three-dimensional features? It would be even more remarkable if it achieves it as an abstract construction, as if just with its gesture could indicate visitors where to go if they need a bus. Consequently, after reviewing the respective literature and buildings, it is possible. The necessary means is the development of a new architectonic language, free from all social conventions, that as signifier can communicate efficient and radically its respective signified.

Architektur in der Schweiz um 1989 – «forme forte» zwischen Bild und Abstraktion Architecture in Switzerland around 1989 – «forme forte» between Image and Abstraction

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6 ABBILDUNGSVERZEICHNIS LIST OF FIGURES

Fig. 1: Martin Steinmann. Retrieved from https://www.hochparterre.ch/nachrichten/architektur/zaertlich-dinge-beschreiben

Fig. 2: Le Corbusier. Retrieved from https://www. nostraforma.com/designer/le-corbusier.html

Fig. 3: Peter Zumthor. Retrieved from https://www. nzz.ch/feuilleton/peter-zumthor-die-frage-nachder-groesse-hat-mich-nie-beeindruckt-ld.1490005?reduced=true

Fig. 4: Jacques Herzog. Retrieved <u>from https://</u> archive.arch.ethz.ch/studio-basel/people/ prof.-jacques-herzog.html

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Fig. 6: Shelter for Roman Ruins in Chur. View from the backyard. Author's own. November 2022.

Fig. 7: View of the Museum from Seilerbahnweg. Author's own. November 2022.

Fig. 8: Ricola Storage in Laufen. View from the arrival area. Author's own. November 2022.

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Fig. 10: Roman Ruins Shelter during night. Retrieved from <u>https://www.atlasofplaces.com/</u> architecture/shelter-roman-archaeological-site/

Fig. 11: The cladding of the Ricola Storage Building. Author's own. November 2022.

Fig. 12: Concept Model of the Signal Box. Retrieved from <u>https://www.moma.org/collection/</u> works/1016

Fig. 13: Wooden fence-like surface of the Shelter in Chur. Author's own. November 2022.

Fig. 14: Eternit plates assembled in the Storage Building. Author's own. November 2022.

Fig. 15: Folded copper slats of the Signal Box. Retrieved from <u>https://www.miesarch.com/</u> work/2645

Fig. 16: Bus Station in Rotterdam. Retrieved from Steinmann, Martin: La forme forte, in Forme Forte écrits 1972-2002 = Schriften 1972-2002, 1991. p. 193.

7 REDLICHKEITS-ERKLÄRUNG DECLARATION OF ORIGINALITY

Hiermit versichere ich, dass die vorliegende Arbeit mit dem Titel:

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selbstständig durch mich verfasst worden ist, dass keine anderen Quellen und Hilfsmittel als die angegebenen benutzt worden sind und dass die Stellen der Arbeit, die anderen Werken - auch elektronischen Medien - dem Wortlaut oder Sinn nach entnommen wurden, unter Angabe der Quelle als Entlehnung kenntlich gemacht worden sind.

Baumann Sepulveda Paul

Kriens, 10.01.2023