Contemporary architecture and colour: final definitions for mapping intent

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ABSTRACT

The focus of this study is to define and map out design intent using *occurrences of practice* that are strongly representative of the adoption of chromatic devices intended as instruments capable of identifying and making legible (in previous contributions we talked about *amplification of meaning*) the conceptual principles that define the foundation of the design process of an architectural project, as well as to keep them explicit in their formal outcomes.

KEYWORDS Architecture, Color, Mapping intent

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1. Introduction

This text illustrates the third and final contribution – the first and second appeared in *Colour and colorimetry* VIII (Borsotti in Rossi, Siniscalco, 2012) and *Colour and colorimetry* X volumes (Borsotti, in Rossi, Marchiafava, 2014) – on the reflection that, moving between identification of contemporary paradigmatic case studies and hypotheses of classification of their outcomes within defined areas referring to common attitudes, look at the use of colour as a true design tool; a real "material" for the realisation of an architectural program.

The focus of this study is to define and map out design intent using occurrences of practice that are strongly representative of the adoption of chromatic devices intended as instruments capable of identifying and making legible (in previous contributions we talked about *amplification of meaning*) the conceptual principles that define the foundation of the design process of an architectural project, as well as to keep them explicit in their formal outcomes.

This is an exploration which undoubtedly moves beyond the common concept that, in contemporary architectural production, the use of colour is a choice of pure and simple superficial finish, applicable, case by case, according to extemporaneous aesthetic matrices. The use of colour should, instead, be recognised as a fundamental tool for tracing, with regards to the recurrence of mutually assimilable solutions, the emergence of trends inscribed within precise design communication intentions.

After retracing and defining a few potential scenarios such as *iconic urban*, *spot colour*, *palette colour*, *differently residential colour*, *perspective colour*, *edge colour*, *immersive colour* and *translucent colour*, here is an outline of the remaining possible categories. (Borsotti in Rossi, Siniscalco, 2012) (Borsotti, in Rossi, Marchiafava, 2014)

First of all we must underline the necessary premise that the results of this study do not claim to define a definitive tool for the use of colour in architecture, since this remains, above all, an expression and representation that adheres to geographic and temporal socio-cultural and traditional phenomena, as well as the consequence of the availability of different materials and technologies and the direction of various cultural trends, inevitably linked to the make-up of each designer's personal aesthetic sensibility.

The categories here illustrated, derive, rather, from an indepth reflection that seeks to outline the main profiles of the vast contemporary landscape of colour presence in architecture, a research field rarely defined within an overall critical vision and where, instead, homogeneous areas of design practice emerge that should brought back to clear and circumscribable backgrounds and precise intent.

2. Container colour

Architects have always been fascinated by the concept of the container, attempting to grasp how much its characteristics, measurements and constructive structure and standardised volume can become a prefabricated cellular space, easily transportable and aggregable, how to preserve potentially decisive declinations for the definition of modular and serial habitable environments.

Then there is a further suggestion that comes from the quasi-urban image offered by the transit and storage piers, where the containers, are piled up in large quantities, drawing intricate paths made by large, compact masses.

In the numerous and intriguing attempts to transform these visions into an applied architectural project, the presence of colour, already implicit in the original model, plays a fundamental role.

On the one hand, the use of the "container icon" preserves the distinction of the basic module, establishing a communicative system of immediate and evident readability that leads back the inhabitable aggregation within its dimensional and structural components and, on the other, defines a clear recognisability of its modularity, which helps to make the architectural fronts more dynamic allowing for a very strong "personalisation" of the housing aggregates.

A paradigmatic example of this architectural choice is the *housing complex* built in Carabanchel (Madrid, Spain) by *Amann-Canovas-Maruri Architects*, where the entire building is designed according to overlapping linear sequences of environments created with metalworking structures, the colours of which have been chosen by the building users themselves.

The alternating rhythm of empty and full, defined by the insertion of terraced spaces between one residential module and the other, is strongly emphasised by these chromatic sequences which, to better preserve their nature of compact coloured backgrounds, do not even suffer the interference of full-height windows. These, in fact, are cleverly integrated into the metal structure of the external cladding, while the intermediate string courses, dark and thick, define the linear syntax of a supporting grid on which the individual housing units, each one recognisable by its own colour, appear literally

"supported", within a sort of optical play on structural equilibrium.

This principle affirms the architectural breakdown of the volumes into the summation of their constitutive industrial parts, revealing the desire to produce a habitable system according to the *box-in-box* principle, where colour is precisely the revealing tool of this choice. There are many illustrious examples prior to this.

Take for example the most apparent experiments of the so-called *Container City* of *Trinity Buoy Wharf* (2001) in London, as well as the sophisticated concepts in Holland, *MVRDV*, such as *Silodam* (2002) or the *Cancer Centre* (2005) both in Amsterdam, which converge towards their great *Container City* project, a potential "cargotecture" for Rotterdam city, consisting of 3500 used containers.

Even when the base matrix of the container is more a conceptual and ideological reference than a direct structural reality, the iconic force of its presence remains fundamental and is explained precisely by the free chromatic assemblage that underlies it, as it happens, for example, in the *Box 298* office building designed by

Andrade Morettin Arquitetos Associados in Vila Madalena (São Paulo, Brazil).

Here, indeed, the stated intent to improve the visual perception of the space and place where the building is located, adopts the *container colour* array to mark, according to a vertical "cascade" sequence (as in a three-dimensional game of Tetris), coloured surfaces made by corrugated sheet that saturate the full portions of the building, thus reinforcing the presence of the large glazed partitions, sometime left free to generate empty terraced spaces.

3. Deep colour

A chromatic insertion is often used, in the overall system of a building, as a planning tool to define its constituent rhythm. The presence of a colour, a fact that is inevitably evident and immediately readable, acts, indeed, as a real visual *marker* the task of which is to highlight and "bring out", right on the surface of the building, the geometric rules which give shape to the construction of the conceptual design of the project.



Fig. 1. Box 298 office building, Vila Madalena (São Paulo, Brasil, 2009). Courtesy by Andrade Morettin Arquitetos Associados©, Nelson Kon photographer©.

The chromatic intervention arises as an action that must be coordinated with the understandability of the design principles that drive the creation of the entire architectural structure and help to maintain its evidence. The opportunity offered by the chromatic definition of architectural elements (clearly attributable to the sequence of empty and full spaces that characterise the assembling phase of the geometrical elements, as well as of the structural components) therefore represents a powerful instrument of explicit representation of the linguistic rules that are at the heart of the project. A paradigmatic example is the realization of the new volume of the Gymnasium of the Riva School complex in San Vitale Middle (Switzerland), designed by architects Durisch and Nolli. Here we find a double-body building where the inner and self-supporting one, which houses classrooms and sports equipment, is completely included within an external casing, which assumes the task of designing a compact and homogeneous facade. The great formal clearness of this external body, a rectangular base prism with a double-height portion, is marked by a linear succession of thick, high and narrow slabs, which make the façade dynamic, making the constructive system clear, where once again the theme of the concrete pillar-lintel is proposed, taken from the existing middle school. The presence of this system is reproduced on the façade through the repetition of an identical module, which can be assembled to infinity, the rigorous consistency of which is underlined and modelled by the insertion of a lively chromatic palette applied just on the inner faces of pillars, to underline the vacuous portions. It is this continuity, immutable in its measurements, but vivaciously varied in its colours, that immediately makes the reading of the geometric coherence of the whole system apparent.

A different model of composition characterises another *municipal building for sporting activity*, designed by *GANA Arquitectura* in Vélez-Málaga (Spain), consisting of a compact and translucent space that takes the shape of from a homogeneous one with an alternation of prismatic bodies.



Fig. 2. Gymnasium of the Middle School complex, Riva San Vitale (Switzerland). Courtesy by Durisch and Nolli architects©, Tonatiuh Ambrosetti photographer©.

In this example as well, the rhythm generated and the reading of the full and empty spaces that distribute the mass of the building, otherwise marked by an almost impenetrable material-visual consistency (which also integrates the opening surfaces, of which only the frames are distinguishable) is affirmed by the use of a strong chromatic presence, realised by using bright ochre yellow, bringing out an effect of extreme dynamism of the volume's depth and its luminous contrasts.

Emmanuelle Moureaux, whose work is intrinsically linked to the use of colour as an essential part of her conceptual development process of the architectural idea, presents a research path that explores the emotional and perceptive potential of chromatic/architectural systems. In her work this system is defined by involving lines and surfaces to reach a more three-dimensional vision, where it is not simply the linear extension that is marked, but the volumetric depth of the building.

In this way, the colour properly assumes the role of marker element capable of unveiling the geometric and rhythmic matrix of the alteration of an initial primary stereometric volume. "I use colours as three-dimensional elements, like layers, so as to create spaces, not as a final touch applied to surfaces ». (Moureaux, n.d.)



Fig. 3. Sugamo Shinkin bank, Tokiwadai (Tokyo, Japan, 2010). Courtesy by Emmanuelle Moureaux architecture+design©.



Fig. 4. Sugamo Shinkin bank, Nakaoki (Kawaguchi, Japan, 2014). Courtesy by Emmanuelle Moureaux architecture+design©.

The offices of the *Sugamo Shinkin bank* at Tokiwadai (Tokyo, 2010) and at Nakaoki (Kawaguchi, 2014) could be interpreted as the positive or negative of the same architectural reasoning: the thought of how to treat the volume, in the case of the first building an excavation and subtraction process of cubic and splayed portions of the volume while in the second an extrusion and addition of equally cubic jutting out elements, is revealed and emphasised by the use of colour.

Colour is used where the homogeneity of the basic stereometric matrix is undermined and it enhances the perceptive depth of a volumetric system that seeks a strong dynamic tension in space, involved and reshaped in its physical depth.

4. Expressive colour

Colour is an essential part of a large number of artistic phenomena, thus, without delving too deep into field definitions that refer to other disciplines, we can reasonably state that colour marks and substantiates in itself the artistic presence as instrument and expression of relationships between nature and abstraction, between representation and suggestion.

It is therefore particularly interesting to observe what happens when artists and architects meet each other in the field of architectural design, finding in the chromatic device a common field of comparison. It is also interesting to verify how often, in the variety of experiments and experiences, it is possible to find such a constant in the intense expressive use of the colour, aimed to the valorisation of cultural and territorial content.

Analyzing some of the numerous traceable case studies, in fact, it is possible to notice how the use of color (a natural act for an artist), when applied to architecture often takes on large scale connotations (both dimensional and social), activating as a "highlighter" that underlines and reveals the role of architecture, the built environment, even in its most urgent critical issues, integrating with it to generate new, unexpected and sometimes fascinating conditions of livability.

Particularly paradigmatic, not just for its expressive power, is the work by artist *Pipilotti Rist* and architect *Carlos Martinez*, both Swiss, in the *Raiffeisen Square* in St. Gallen (Switzerland, 2003-2005), shaped as a place which, while remaining entirely an urban system integrated into the city, assumes the disruptive and poetic force of a permanent installation stretched across a vast scale, combining these two souls, apparently distant, precisely through the implementation of intense monochromatic intervention.

A large red surface covers and defines a broad portion of the city, incorporating everything, from the road surface to urban furniture, to cars and fountains, creating uniformity between the more typical elements, often in disorder and dissonance, of the cityscape with those that are, instead, elements of a more interior domestic character, such as sofas, and tables. All these presences come together to form, finally, "soft" in their form and substance, thanks to the use of a rubbery material, composed of various layers of rubber granules, glue and particular colour choices.

The result is a "different" urban space, strongly abstract, yet concretely linked to well-defined functions, explicitly cited with nomenclatures that refer to old and new attitudes of the public place: "reception", "foyer", "sculpture park" and "reading corner".

The large square and the streets nearby become a unifying vision, a different way of understanding the "urbanity", imbued with a habitable comfortable interior and the colour is its most obvious statement: a poetic expression that also becomes a critical reflection on the daily reality of the conformation of the contemporary city.

Although included into a completely and dramatically different urban context, the intervention that the multidisciplinary collective *Boa Mistura* realised in 2012 at the favela Vila Brasilândia of São Paulo (Brazil), take form from a very similar conceptual assumption.

Conceived as a recognisable sign of the affirmation of a collective conscience, this urban artistic intervention

subverts the apparent rules of a disadvantaged everyday life, replacing them with the deeper values of its daily experience, represented by the discovery of words chosen to represent the feelings that the inhabitants of the favela share.

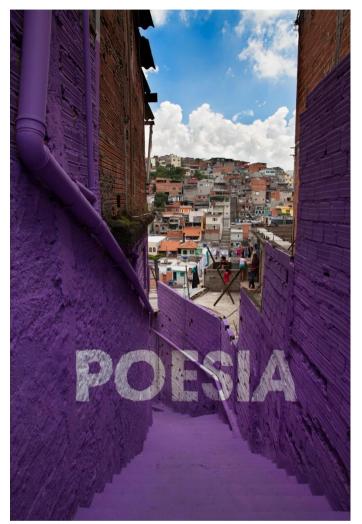


Fig. 5. Luz Nas Vielas (Poesía), favela Vila Brasilândia, São Paulo (Brazil, 2012). Courtesy by Boa Mistura©.

In this way, an alternative model of humanity is opposed to an urban failure that transforms the architecture of living, (here uncertain, minimal and self-built), by introducing a poetic reaction. Again, colour is the medium, powerful and immediate, used to initiate this reaction, a bearer of identity and territorial affirmation.

Luz nas vielas (Light in the alleys) is a collective intervention that involved the inhabitants of the favela in all phases of its implementation. People are encouraged to paint alleys and streets with vivid and bright colours, applied by brush and roller directly on the improvised conglomerates that make up its houses, to redefine them, through large chromatic backgrounds from which emerge graphic signs that, by adopting the technique of anamorphism, in a single fleeting point of view, conquer form and legibility of words.

«The project aims to respond to this characteristic spatial complexity [defined] by narrow, winding corridors that connect the upper and lower urban areas, known as "vielas". Flattening the perspective from one point (anamorphism), the words "beleza", "firmeza", "amore", "doçura" and "orgulho" are read and framed by a flat colour, which covers all the building materials in the same way, democratising space. For us, these words are the best portrait of the favela». (Boamistura, n.d.)

The many works of urban re-interpreting *Boa Mistura*, almost always adopt the convergence of writing and colour in order to literally return the words themselves to places, transforming them from unfinished or forgotten landscapes into narrative spaces. The colour intervention is no mere application tool. It is a clear stance: its use, its presence, redefines the spaces by enveloping them in a renewed spatiality.

In the intervention carried out for the restructuring of the *Mercado de la Cebada*, in Madrid (Spain, 2013) the two main façades and the six large concrete domes of the public building, built in 1958 and, at that age, in a state of serious architectural decay, have been transformed by the disruptive appearance of colour, which characterises each dome with a different shade, and by the appearance of the writing "Llena la vida de color" (Fill life with colour) and "colour".

The latter again takes shape on the domes thanks to the anamorphism. The artistic-architectural action expresses the intent to restore visibility to the building and thus reaffirm its social role, subverting the process of abandonment that had brought it to the brink of demolition and, instead, supporting the process of recovery.

"We have changed the colour of each dome, thereby modifying the landscape of the area. Colours show optimism and somehow highlight what is happening on the market.". (Boamistura, n.d.a)



Fig. 6. Luz Nas Vielas (Poesía), favela Vila Brasilândia, São Paulo (Brazil, 2012). Courtesy by Boa Mistura©.



Fig. 7. Luz Nas Vielas (Orgulho), favela Vila Brasilândia, São Paulo (Brazil, 2012). Courtesy by Boa Mistura©.

Colour, therefore, is a visual structure capable of activating narratives that intersect with the physical substance of the architecture, with its being a form that occupies and modifies space, but also a fragile trace of individual and collective histories, perpetually exposed to erosion of matter as well as multiple and often contradictory or insensitive interests (such as flows of economic interests).

A chromatic intervention can disturb the rules of everyday life, it can destabilise the constructed landscape by transforming some of its consolidated components (often made invisible by a process of careless additions) into a vibrant presence, into truly evocative manifestos.

This is why Amanda Williams, an African-American visual artist with an architect's background, works on old houses destined for demolition in the South Side of Chicago – an artistic action that takes the name of *Color* (ed) Theory Series – repainting them completely, intervening on each one with a single bright colour, belonging to a signature palette of eight colours, to claim

its existence and, in a way, to honour the buildings' last moments.

«I wanted to mark the final act of the end of the era of a black space (...) the architecture in some neighbourhoods is characterised by a process of removal, not addition». (Sargent, 2015)

These are artistic acts which do not intervene in the architectural project, but in the architectural reinterpretation of the existing signs, in order to clearly mark their imminent end and trace their historical significance within the urban landscape. At the same time these acts aim to generate questions about the dynamics that have progressively erased a "black" neighbourhood (today there are over five thousand lots stripped of human and architectural presence), whose final moments are celebrated by using colour, which elevates them to the temporary rank of works of art, for their value as fragments of the cultural memory of traditionally African-American spaces.

"What colour is urban? What colour is gentrification? What colour is privilege? What colour is poverty? Looking for answers, I painted abandoned houses in the South Side of Chicago using a monochromatic colour palette that is culturally coded (...) I am working on a system that imagines original ways to build new narratives for landscapes with zero value, which will allow them to free themselves from the identity of the victim and embrace the role of active protagonist». [7]

5. Conclusions

The three instances of this investigation into the use of colour in contemporary architecture (see note 1) have helped to circumscribe some common design methods, where chromatic intervention represents the foundation of the project's intention and become a fundamental tool of its realisation. Now, we can draw a number of overall conclusions that stem from the study as a whole.

First of all, we can confirm that there is a close relationship between the foundational conceptual intent of some design processes and the identification of the use of colour as a programmatic choice deemed necessary in order to sustain and explain these intentions.

Colour, therefore, must be seen as an integral part of the idea of architecture, and not as a mere accessory. Furthermore, we have seen some design process areas where colour finds a clear correspondence with its final

configuration in view of the overall architectural intervention realised and with the ideal objective with

which they were conceived and realised, thus defining the research field itself.



Fig. 8. Mercado de la Cebada, Madrid (Spain, 2013). Courtesy by Boa Mistura©.

The many categorisations referred to, in fact, identify some of the main thematic areas in which they find obvious application:

- the *urban iconic* (colour as a concrete element of affirmation of recognisability within the urban fabric) and the *immersive colour* (colour as a prevalent and allencompassing component) represent two, sometimes overlapping, attitudes, where architecture defines its own evident role in the context through a predominant chromatic presence: here colour engages the whole building affirming its indisputable iconic presence.

Therefore, through colour, a principle of unequivocal and evident relationship is established between the architectural complex and its context. We can also say that the *different residential colour* (the intensive use of colour devices characterising the new concept of *social housing*) is a category that has the same intention of selfaffirmation, developed, not by chance, in a specialised typological field. Here, in fact, colour (usually satisfying a need for personalisation and recognition relating to the individuality of a single complex inhabitant) is used, instead, to underline and unequivocally support the strongly experimental and innovative character of these new housing forms.

- the spot colour (colour as an architectural marker, that clearly defines the fundamental elements of a design) places the chromatic intervention at the heart of the visual-interpretative system of an architectural complex, recognising it as a *mediator* capable of underlining all the devices of the architectural composition and form, adopted in the definition of the building.

It acts as a sort of "architectural-scale highlighter", which underlines the project's "key words", according to an overall and omni-comprehensive process of which the *perspective colour* (colour as an exaltation of the threedimensional depth of the space), the *edge colour* (colour as a reinforcement of the margins) and the *deep colour* (color as a scan of empty and full spaces) are not so much sub-categories, rather they are more specifically adjectivisations, which consolidate and provide a better and more spontaneous understanding, precise ideological-conceptual choices. In these categories, therefore, colour seems to be a code that truly declares architectural principles.

- the *palette colour* (color as a "palletised" -colour communication system) and the *container colour* (colour that states the principle of the "box in a box") represent the most multicolour and geometric outcomes of "coloured architecture".

In this case we are faced with an architecture punctuated by the adoption of modules (in the first case more related to the façade while more connected to compositional choices in the second case) the repetition of which is emphasised by the continuous combination of different colour shades.

The resulting visual impact is expressed in the clear reading of the rhythmic scanning of a composition and in the perception of a potentially infinite tension of these chromatic sequences. These ones are also present in the assembly phase of their parts, thanks to the visibility of the margins defined by the geometric meshes adopted, which, in the case of the *container colour*, also often have a three-dimensional correspondence (hence "habitable").

- the *translucent colour*, apparently unrelatable to the previous categories, is in the same conceptual framework that thinks about the material nature of colour and its density, exploring its inherent potential in the transition from compact texture (which delineates and delimits a surface) to a porous and "traversable" system (for light, reflections, images).

Here, there is an intentionality to delve deeper into the idea of spatiality, designed as a layering of layers, which, as on a computer screen, are distinguished and managed through the attribution of different colours. In brief, these are three categories that meditate on the visual and perceptual physicality of colour as "building material".

- the *expressive colour*, finally, enters the "middle world" where architecture meets art, to see how urban and territorial redesign contexts, in the vastness of their experiences and situations, often find a place of convergence in the use of colour, which adheres to the construct following and formalising the intuitions of the artist.

Thus are triggered phenomena of reinterpretation of the constructed landscape, which amplify the artistic sensitivity to the definition and virtual (and sometimes

real) change of its spatiality, thanks to the chromatic addition. This modifies the usual point of view, exposing its weaknesses and hypocrisies through the grafting of different narrative phenomena, sometimes innovative, but more often "dormant". Colour as an affirmation, even a political one, of the architecture's role.

Conflict of interest declaration

All authors of the Color Culture and Science Journal (CCSJ) are requested to disclose any actual or potential conflict of interest including financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. The Conflict of interest declaration must be included in the paper and states if no financial/personal interests have affected the objectivity of the author(s), or if there are, the source and nature of the potential conflicts. Authors must state explicitly whether potential conflicts do, or do not exist.

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Notes

[1] M. Borsotti (2012). Architetture contemporanee e colore: amplificazioni di senso. In: M. Rossi, A. Siniscalco. Colore e Colorimetria. Contributi Multidisciplinari Vol. VIII A. Alma Mater Studiorum, Università di Bologna, Facoltà di Ingegneria, Bologna, 13/09/2012 - 14/09/2012, p. 315-322, Milano: Maggioli Editore, ISBN: 8838761361 and Borsotti, M. (2014). Architetture contemporanee e colore: altre amplificazioni di senso. In Rossi M., Marchiafava V. (Ed), Colore e colorimetria. Contributi multidisciplinari. Vol. X A. Atti della Decima Conferenza del Colore. Università degli Studi di Genova. (pp. 511- 518) Santarcangelo di Romagna (RN): Maggioli. ISBN 978-88-916-0437-8

[3] Emmanuelle Moureaux, *Shikiri. Dividing and creating space through colors. See*: Retrieved from: http://www.emmanuellemoureaux.com/shikiri/ (consulted 1/4 2016)

[4] Retrieved from: http://www.boamistura.com/luz_nas_vielas.html (consulted 1/4 2016)

[5] Retrieved from: http://www.boamistura.com/color.html (consulted 1/4 2016)

[7] Amanda Williams, *Color(ed) Theory Series*. Retrieved from: http://awgallery.com/section/373029-Color-ed-Theory-Series.html (consulted 1/4 2016)

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^[6] Antwaun Sargent, *Amanda Williams' Color Theories*. Retrieved from: http://www.interviewmagazine.com/art/amanda-williams-color-theories/ (consulted 1/4 2016)

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