Is colour a code? Notes to a design project of a landscape

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ABSTRACT
The landscapes with a balanced relationship between human and natural forms retain their changing colours, because of the alternation of the seasons and the change of population: each element has its colour which recalls the others and each of them gives a distinctive character to the place.
How can this polychromy become a tool to understand cities and territories, as well as a criterion of intervention? Because the perception of colours is variable, ignorance is not justifiable by a description made with an objective code; in fact, by day light and weather change colours, by night artificial light becomes the landscape’s colour and allows the perception of its morphologies and purposes, as much as colours reveal the material and the subjection to time by day.
Taking away the use of colour from the casualty of events to take them into account as a programmed choice and designing the environmental placement of new chromatic elements implies confrontation with this complex subject.
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1. INTRODUCTION
In non-specific terms, a code is a useful tool for representation, transmission and storage of information: on the one hand it is the system of rules of a particular subject, on the other it is the set of its conventional signs, so either the geometrical fundaments of design and its graphic standards - including the use of colour - are codes for a project. Colour, however, may have an important role as a code of communication of the project intervention, that is to say as a set of signs and rules immediately acknowledgeable in the physical context which is qualified by the project.
The experience of colour as a code that acts into the real world, even before that into the virtuality of digital models, is affecting the landscape of Destra Adige Lagarina in the region Trentino: a large natural amphitheater in front of the town of Rovereto on which it is engaged, over time, a mosaic of shapes and colours produced by the agricultural and settlement structures. As part of a feasibility study for the establishment of an “agri-tourism district” oriented towards the development of the economic-productive and the landscape-territorial systems, and the promotion of cultural and touristic activities, a pedestrian and cycle path is under design in a valley adjacent to the river Adige and wants to be the first step towards the preservation of architectural, agricultural and natural heritage; it is a loop trail of about 30 km (about 18 miles and a half) connecting five capital towns: Isera, Nogaredo, Villa Lagarina, Pomarolo and Nomi.

The idea of the project relies on a colour, extraneous to the context, the aesthetic value of the intervention: this choice derives from a careful reading the existent chromaticity referring to criteria of perception, rather than by using scientific analysis and historical reconstruction of the use of colour in time and local building traditions. While in this last case, the design aim is the conservation of a consolidated figurative characteristic and the preservation of its “material culture”, with the study and the interpretation of the image of places through visual data there has been the attempt to highlight environmental constants that could guide to the insertion of new chromatic components.

In other words, the photographic and survey observations seasonally conducted for two years have led to synthesize, through a series of dominant colours, the chromatic complexity of urban and rural areas, cultivations and terraced vineyards, forests and pastures: from this operation of abstraction and mediation between the existent colours, the colour of the project is born, eruptively but in some ways “necessary”.

2. THE ANALYTIC STAGE
In physics, colours are by nature independent - non-subjective - and exist due to the wavelength of those portions of the light spectrum emitted or reflected from the surfaces of bodies. Despite this, empirical knowledge teaches us, instead, that colours are physical-chemical properties of matter and are caused by the nature of objects and the variation in light, because surfaces affect the quality of the light beams they reflect. Finally, for our sensorial experience, colours are due to the physiological and psychological disposition of the observer: consequentially they are the result of subjective
and autonomous experience, though only cultural stratification itself makes it possible to define colours as a shared sensation, by which we describe fields and woods with green, danger with red and mourning with black. Colour as “coloured matter”, perceived through natural phenomena and variously fixed to masses and surfaces, can be subject for measurements based on visual and instrumental methods: countryside surveys and comparison with the range of reference samples, analysis of the state of conservation of surfaces, in situ sampling and laboratory research, preparation of rating sheets. The description of colour as a sensation, accidental and dependent on subjective perception, suffers mostly from the weather and lighting; from Leonardo to Goethe it is always associated with light and shadow which, respectively, produce or swallow colours: paraphrasing Leonardo, the shadow is always part of the colour of its object.

The proposed cycle-pedestrian path in Destra Adige Lagarina favours this world of physiological colours, and in comparison with it, makes its choices; the analytical phase is based on visual and comparative methods, as much in acquisition as in the restitution of data. After preliminary evaluation of the polychrome colour palettes that characterize the different contexts, inhabited and not, some sample cases have been identified that can be attributed to five categories of environmental and architectural facts: flooring, facades, roofing, agricultural land and uncultivated nature. The visual and photographic surveys were repeated in the different seasons: colours were recorded on preparatory sketches also in reference to commercial catalogs of coded colour samples, data was acquired at precise times of the day, before the sun lit directly the building curtain and the use of a colour-scale in phase of recollection has allowed to control the exposure and colour balance throughout all stages of processing of digital images; the
availability of monitors and printers calibrated with a colorimeter was also the fundamental. The inventory of observations collected for each study case, translated into RGB colour codes with the exception of out of context colours, allowed to obtain the average representing the dominant colours through sampling procedures in graphics applications; edited and un-detailed photographic views, referring to commercially available on the internet pigment formula guides, summarize the prevailing appearance and background colour of every place, linked both to colour-tone and colour-facing. On these synthesis “conceptual” images, the design hypothesis were then simulated by following modelling and rendering procedures.

3. THE PLANNING STAGE
There is an optical phenomenon that occurs in the perception of colours for which the observation of a primary colour recalls the complementary colour; this is the reaction by which the retina tends to restore an altered physiological balance and, poetically, a tension of colour to its “fullness”: staring at yellow produces violet; staring at the blue, orange; staring at the red, green. Trees and shrubs of the mountain slopes, the cultivations of terraced hills and fields in the plains, parks and gardens of the villages are so exalted by red, which identifies the pedestrian and cycle path in the valley; a historically ambivalent colour, the supremacy of which was imposed throughout the West because of its little presence in nature, but also for the early and effective use of red pigments: a symbol of power and wealth but also of life and death, it is a colour that wants to be seen and prevail over the others.

The project aims to minimum targets, not for economic reasons but to prevent overloading the space with unnecessary additions, rewarding only in a self-celebratory point of view. The idea used to sew up the landscape of Vallagarina with a bicycle route lays in the choice of the “point” element as a basic module and primary constituent of every object participating in the itinerary; this signal of qualification of the path, and recognizable by day and night, is a kind of “topographical nail” driven into the ground or floor and repeated at regular distances or variable positions: the box-shaped head is laid at ground level and the upper iron square face is heat enamelled, the stem has the shape and technical installation depending on the road floor.
The succession of mono-directional red signals on the roadway visually creates a dotted line, the path of which varies in relation to existing viability; the line has the function to guide and orientation and is made from a sequence of opaque elements interrupted by bright spots, which is responsible for recognition of the trail at night. The repetition of the nails in two directions x and y of an horizontal board, instead, produces a tessellated surface, which gives birth to different objects that confer aesthetic quality of the project, and were designed elaborating quadrangular areas in plane and in space: dissuading from stopping, signalling of preferential lanes, visual or auditory physical screening, information boards, seating systems, roof structures, urban lighting.

Point, line and plane generate a set of homogeneous solutions, composed by parts, available to adapt to the heterogeneity of places.

4. CONCLUSIONS
The experience described in the text and illustrated in the images confirms that the protection of the historical identity of a vast territory can be entrusted to the design of innovative elements, provided that the anomaly is not divergence and that the exception does not become dissonance. The red colour that designs with minute and simple elements, from a formal point of view, the cycle-pedestrian path in Destra Adige Laggerina, awards new order to the existent chromatic range and systematizes harmony between mimetic needs and inventive contributions; architectural, archaeological and environmental emergents intercepted on the route regain value and position with the contemporary design, which works in by contrast: the colour becomes an instrument of protection and essential component of the processes of recognition of sites and their adaptability to the “new” and projection into the future.

The idea of a path made up of points of bright colours, the perception of which imposes itself, but because of physic discrete quantities, is in some way a proposal of decoration, perhaps risky but certainly hybrid and due to this, fruitful: it preserves the relation with the local building traditions and with the natural landforms, but also involves testing of new integrated materials, new solutions of industrial production and new accomplishments. The result is a winning dialectical relationship between nature and artifice, old and new, need of conservation and desire of innovation.
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